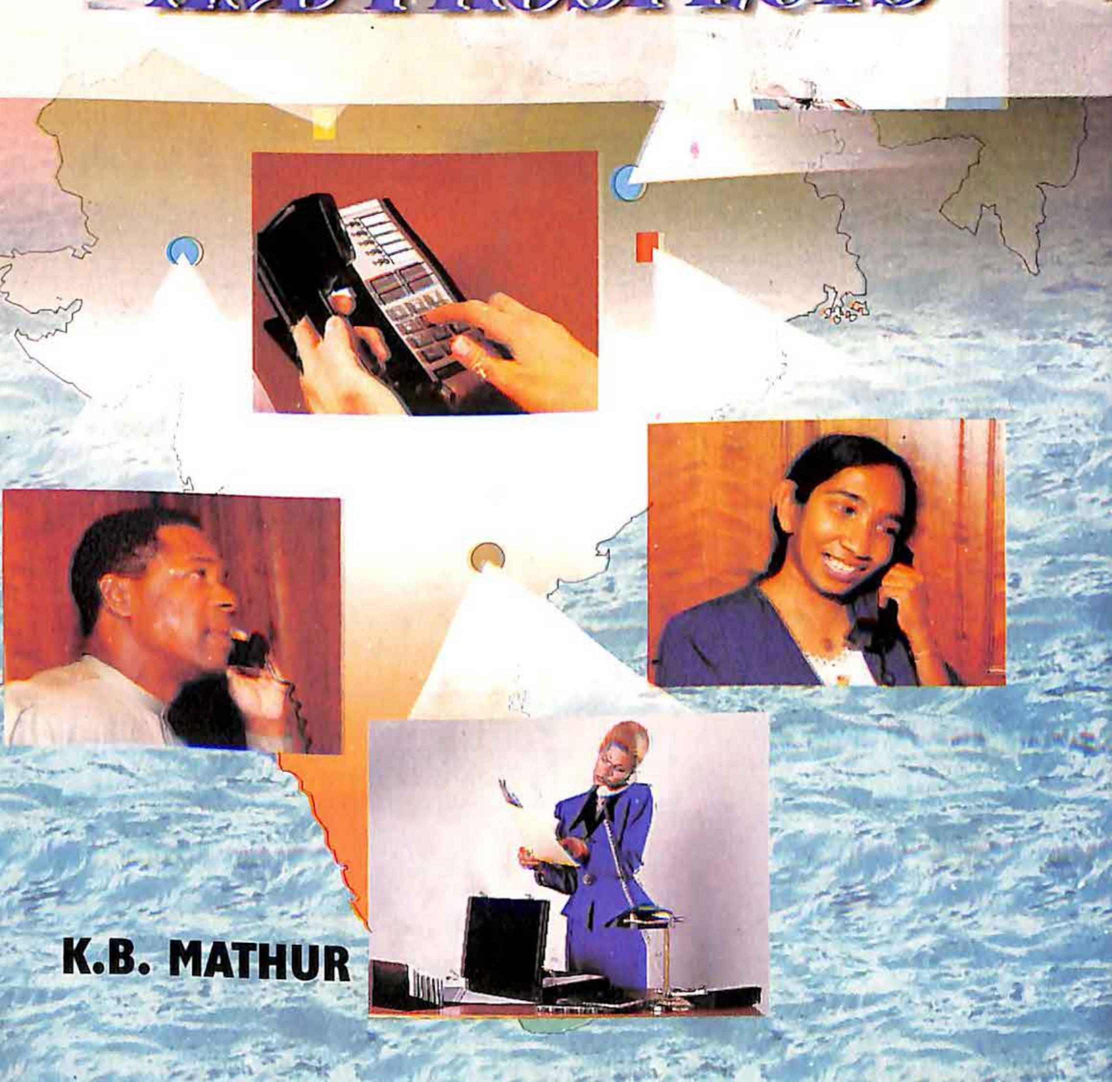
COMMUNICATION

INDIAN PERSPECTIVES AND PROSPECTS



K.B. MATHUR

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To

MADHUR

My Wife

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INTRODUCTION

The face of the world is rapidly changing. This is due to the advent of new communication technologies spearheaded by the Internet. Some beneficial effects of new technologies and the emergence of cyberspace have been globalisation, the promotion of interaction between people and business organizations, the growth of net economy, and a greater awareness of the happenings around the globe.

Though communication technology advancement is continually contributing to the shrinkage of the world into a global village, the role of communication *per se* continues to be the smoothing and accelerating of socio-economic and cultural development of the people at large (Annexure 1). However, the down of the computer age has also begun to pose a challenge to sovereignty of a nation–since national frontiers are being obliterated by cyberspace which knows no barriers–cultural identity and territorial integrity.

In view of such developments countries like India have to develop policies and plans to be partners in and contributors to the evolution of the brave new cyberworld. And in this task the politicians, administrators, planners, decision makers and practitioners and students of communication in India have to play a decisive role by being aware of and knowledgeable about the diverse aspects of communication, the significance and implications of the fast growing communication technologies in the light of the national policies, plans and overall socio-economic and cultural objectives.

The exponential growth and innovation of information and communication technologies by way of convergence and globalisations is bringing about a rapid and perhaps and irreversible transformation of our societies so that we will soon be playful our rightful roles of citizens of democracy on cyberdemocracy and new modes of expressions and depresentation and citizen, new way of doing business, banking or prior communication with anyone from every where are every time.

No aspect of life, whether economic, social or political, will remain unaffected by this technological growth : it will affect individuals and society who will be brought together as never before for good and for evil. And we will see the emergence of a large number of internauts or netziens–those who have access to and use Internet services--, of cybernauts who utilise cyberspace technologies in their ordinary business of life–and yet others like cybercrooks, cyberspies, cyberhighwaymen and hackers who steal private, secret information or create such technological nuisances as viruses. To deal wtih such persons cybercops are being deployed following the principle : set a thief to catch a thief. All these phenomena of cybercrime have to be subject of study by a new breed of social scientists called cybersociologists.

Hence, this book seeks to examine the various aspects of the multimedia revolution for the benefit of students of communication and provides a peep into the shape of information and communication technologies to come in the form 24–hours newscasts and breaking news, multifunctional mobile phones, affective television, wearable computers, thought operated devices, virtual reality etc.

An attempt has also been made in this book firstly to describe, for the benefit of policy makers and students and practitioners of communication, the nature and role of communication and to give them and insight into the emerging technologies and highlight how these are changing the social and cultural scene and affecting individuals and businesses alike.

The role of communication in socio-economic development is paramount and the use of modern and traditional media (Annex. 2) in the task has to be very carefully planned and implemented as would be clear from two annexures to this work. Moreover, in order to assess their usefulness or futility, the need is for ensuring a sound research and evaluation component thereof. Annex. 3 provides an introduction to the subject.

People are most concerned with their welfare, their social, economic and cultural development. Now a days they are able to find out, thanks to new technologies, what other people are doing and why and how their present status has come to be. They are coming more and more in contact with one another and are learning to understand the other's perceptions and behaviour patterns. This aspect has given rise to the study of the new and emerging field of intercultural communication. Within countries, and among countries, there are different linguistic, ethnic, religious and cultural groupings each having their own particular ways of thinking, and behaving. This work provides some insights into these aspects in a summary form with the hope that the readers will find the hints useful in interacting with people within the country and from other countries and cultures.

Such being the communication scene and the various concerns, issues and challenges that we have to face, the evident question is as to how one should go about to meet them. There is no magic wand available. The only rational way is to follow policy and planning principles in order to have an action plan that would satisfy national needs and aspirations with self respect, without outside interference or subservience to economically and technologically advanced countries or international organisations. In short, the need is for the development of national communication policy in the light of the call of the Constitution, the Universal Declaration of Human Rights, the people's right to communicate and to access the airwaves which are their property.

It is hoped that this book will prove useful in evoking the interest of students of practitioners of communication in the subject and widen their view of communication not merely as the use of technologies, of writing, editing, production techniques and dissemination and distribution but as the *sine qua non*, as something basic to their understanding of the society, the world at large, and the ultimate objectives towards which their profession has to be oriented.

1

COMMUNICATION : ITS FACETS AND SCOPE

Man is essentially a communicating animal. Communication is his oldest activity and marks him from cradle to the grave. Perhaps the simplest and the broadest definition of the word 'communication' is afforded by the statement. "It is that which links any organism together". The organism may mean two friends in conversation, newspapers and their reading public, a country and its postal service and telephone system. At another level it may refer to the nervous system of an animal while at another it may relate to a civilization and its culture. When communication ceases, the organism breaks up (*Cherry*).

The accompanying Table outlines the biological and communication development of man.

Biological and Communication Development of Man

Biological Stage	*Communication Stage*
In uterus	Response to thermal, mechanical and chemical stimuli.
Infancy	In mother's lap response to touch, auditory and visual stimuli.
Boy/Girl upto 24 months	Develop mastery of head, eye, hand, fingers, feet.
In childhood, Infancy	Develop interpersonal communication with one person at a time.

1	2
In later childhood	Engage in communication with several persons at a time.
In adolescence	Interpersonal communication and effort to interact with opposite sex.
Young adulthood	Mastery of language, ability to deal with others, teaching and learning.
Adulthood	Peak of communication.
Old Age	Relinquishment of power and decision making.

The word 'communication' is used in a very broad sense to include all of the procedures by which one mind may affect another. This involves into only the written and oral speech, but also music, the pictorial arts, the theater, the ballet and in fact all human behaviour.

Communication is Power

Communication is a precious commodity. Though it may be accessible to ali, yet those who have more of it are a class by themselves, an elitist group so to say.

Communication gives power to those who know how to handle it and more often they are loath of share it with others because sharing means losing or reducing their own power in the social milieu.

Those who possess information, possess power information indicates that decision making and power centers are shifting towards those societies that are building up their capacity in terms of production, conservation, management and dissemination of information either for social priorities or for political ends.

The politician, the decision maker, the administrator or a professional communicator or student acquires power and authority and a reputation as a leader in proportion to his communication capacity. Though they thus possess power, they have to be made aware of the rights, duties and obligations towards society that devolve upon them.

Communication is Knowledge

Communication is knowledge and those who do not have access to information have lesser knowledge and therefore less influence or power in society.

Communication and information are the basis of modern industrial organization and net-economy which depend upon the circulation of information both within industry and commerce and through ready access to international networks.

Without communication there would be no shared life or human society, since beings that live side by side without communicating with one another do not constitute a social structure. Hence, the concepts of society and communication are interdependent and the one cannot exist without the other. The degree of development of a society is determined by the level of development of inter-communication.

From the viewpoint of the psychologist, communication is a need, comparable with other basic human needs. From the philosophical viewpoint it is seen as a right. From the aesthetic viewpoint, it is a creative activity.

Communication Reflects Society

Communication reflects the condition of society and is influenced by the same. It has no life of its own. Human beings and society breathe life into it (*Schramm,* 1962). It is not an end in itself or an autonomous, activity but part of the socio–economic and political structure. Its purpose is the stimulation of socioeconomic and cultural development by a strategy of involvement and participation of the people by creating situations in which their opinion can be alerted and informed quickly and rapidly. Communication ensures access and participation of the people and increases community support and awareness of belonging to the nation.

The communication revolution has led to a deepening of national and ethnic consciousness not only in the country but also, as is evident today, in the most oppressed populations of the world (*Tehranian*, 1994).

A policy based on such understanding would enable the government to maintain contact with the people, be able to understand and govern them besides establishing structures integrating inputs at interpersonal, mass media and inter–and intra-agency levels–structures that are innovative, creative, adapted to specific requirements of a society. Such structures should necessarily focus on participatory modes of communication including both traditional and modern media, ensure two–way flow of communication from top to grass–roots and vice versa, encourage indigenous technology rather than costly modern one and focus on the majority of the population inhabiting the rural areas.

Communication is Key Factor in Directed, Planned Change

Communication, moreover, is a key factor in the process of directed and planned change (*Dube*, 1962; *Mathur*, 1994). Communication plays a positive role in national development by helping national identity to develop, consolidate, and fortify. It is also crucial to all processes of technology transfer and serves as a means of feedback from the people to the policy and decision makers.

One of the prime ingredients of development is the dissemination of information about new ideas for personal, community and national welfare. The more the people have access and exposure to communication, easier the development, greater the possibility of neutralizing resistance to change, and smoother the change in knowledge, attitudes and behaviour levels.

In policy making tasks, communication needs to be considered as a transfer of information in desired desired directions to bring about planned change. Importance has to be given as much to information seeking as to information giving as a means to overcome people's resistance and to facilitate change. Communication does not thus mean pushing information towards the target audiences but to take account of their information seeking patterns and integrating these in development planning.

Communication is Social, Cultural

One of the main functions of communication within a social system is to maintain effective performance of social roles, to ensure full social participation and to maintain the members' identification with its ultimate values and symbols. An individual is most receptive to those communications which help him to satisfy various needs, and specifically to perform different status–conferring roles. The effectiveness of any communication or communication system is minimised whenever there exists no compatibility between the aspirations, cultural orientation, and elites and non–elites equation.

Communication has as its central interest those behavioural situations in which a source transmits a message to a receiver (s) with conscious intent to affect the latter's behaviour. Processes of communication fulfill functions within the social system and for individuals who participate in the system.

There is indeed a great need for media to enhance personal lives and establish for each individual the interrelationships between personal identity and the bonds of community with others. The mass media also offer tremendous possibilities to development and cultural democracy–which implies the promotion among the masses of active use and development of their own culture or cultures according to their own conceptions, the evolution of life–styles of their own choice, and wider and fuller participation in national affairs in general. Mass media can be a vehicle for cultural integration which denotes a process of communication concerning fundamental values.

Performs Social Roles

In performance of social roles communication is conducted within specific channels through specific persons, interpersonal relations, persons and agencies in position of leadership. The specific structuring of these functions differ from one social system to another according to its principles of authority, system of values, functional specialization and division of labour.

An individual is most receptive to those communications which help him to satisfy various needs, and specifically to perform different conferring roles. In orally transmitted cultures the techniques of communication become the focus of interest, i.e. only through the elite group or the gate keepers.

A major aspect of cultural transmittal includes the traditions, languages, attitudes, beliefs, values, non verbal matters, and thought orientations passed down from generation to generation. Many of these are part of the unconscious cultural development of the individual (*Bourricaud*).

Communication : Element of Culture

Communication is one of the constituent elements of culture since it is at the origin of its formation, acquisition and enrichment and is the means whereby it is expressed and disseminated.

Culture also consists in the use of the media by which a group of people expresses its activities, transmits its messages to its children and to the rest of the world and conveys it to the various members of the group.

Communication processes are crucial in the assertion and preservation of cultural identity and in ensuring that the ethical and cultural values progress at all aspects of their work, and at the same pace as technological changes. Moreover, through the growth and enlargement of human rights and freedoms communication could ensure the universalization of knowledge and act as a catalyst in the achievement of national identity and the spread of inter–cultural communication.

Awareness needs to be fostered among communication specialists to the importance of their work, and among culture specialists of the potential offered by modern communication media. More specifically, relations between communicators and educators particularly in respect of children's education need to be fostered.

The best way of using communication to assert cultural identities is in integrating traditional and modern forms of communication in the interests of citizenry. Such symbiosis will make the country proud of its cultural heritage. Means of communication must thus serve as a link between the past and the present and contribute towards the preservation of traditions.

Culture is a code we learn and share, and learning and sharing require communication. And communication requires coding and symbols, which must be learned and shared. Communication and culture are inseparable.

Communication and culture are developed unconsciously and an individual's communicative and cultural development are consciously planned or intended. In such conscious development symbols to demonstrate ones cultural identity are used.

In the field of culture communication plays a dual role : that of transmitter and disseminator of culture, and as a channel that brings in the new and different to expand the horizons of the people they reach and serve.

Vital is the role of communication in the propagation and encouragement of cultural values, norms and characteristics as also in achievement of national integration and the building of a sense of national unity.

The role of communication in multi cultural societies is particularly important since a society is a set of individuals communicating with one another and communication itself is the pooling of human resources.

In the field of culture, communication media and techniques play a significant role in the transmission, interpretation and preservation of cultural messages, while in themselves they are also cultural forms in their own right. In this context, the dilemma of modern communication media is most acutely felt, since communication technologies have an equal potential for developing and preserving traditional cultures or for eroding them with a bland international diet.

In the context of culture and national identity it has to be recognized that the information revolution has led to the deepening of national and ethnic consciousness and that the challenge is to enhance the feeling for unity territorial and cultural integrity and national identity. The tasks for which communication media need to be geared are :

(a) assist in national integration;

(b) provide linkages to the national and international markets;

(c) stimulate domestic demand for modern goods and services; mobilize resources for development ; and

(d) diffuse modern values and techniques without surrendering or compromising traditional values.

When media are used consistently to convey information based on alien forms of behaviour and value systems, they deform the national character and exacerbate the phenomena associated with the uprooting of urban industrial communities from their traditional homes and adaptation to unfamiliar ways of life.

Communication is Crucial for Development

Communication's most crucial role is that of being development supportive. The media can infuse the communities they serve to accept necessary changes by modifying attitudes and influencing behaviour. In fact the support given by the media to development should be seen much more broadly : it is not so much a case of persuasion as of the creation of real awareness and the encouragement of participation in the development programmes because active participation can only be based on full and objective information.

Development projects must therefore include a carefully planned communication component which enables participants to be adequately informed. In exchange it offers them the opportunity to express their opinions on the basis of full information when they wish.

In order to hasten development, the communication media should not only inform and entertain the most advanced sectors of the community but also provide a number of public services such as social welfare, systematic and lifelong education, public health, social security, and the various services connected with the community and collective problems.

Promotes National Development

The role of communication in promoting overall national development has the greatest significance. In this connection the function of communication is the of diffusion of development information to the people so that economic, social and cultural benefits could accrue to the largest number in a speedy and effective manner.

At the community level, communication can overcome the feeling of isolation, exclusion and deprivation experienced by those living in the new settlements or in slums.

At the national level the function of an effective communication system is to supply the citizens with the services on an equal basis and also to facilitate inter–community action.

Communication role in the context of development is that it reaches diverse audiences whose participation is essential. Formerly communication media provided a similar diet of news and entertainment to all people but now they have begun to emphasize marketing to separate audiences. Moreover, the emphasis has shifted from building a mass audience to reinforcing differences between groups and their different needs and requirements (*Fizgerald,* 1991). Yet another, but linked factor, is that today the cable and satellite channels are financed by advertising and are for ever in constant search for larger and larger audiences. To attain this goal they are changing the nature of the programmes to suit emerging, different preferences.

Choice Between Development Models

In the context of development, developing countries like India have to resist the temptation of an easy adoption of the Western models which are essentially based on the needs of information–saturated societies while those needed for a developing country, faced with the task of generating endogenous software, has to be based on the needs of an information–derived society. If this challenge of developing endogenous software is not met then the country will more expose its cultural sovereignty to danger from outside forces. Thus, in developing societies the mass media need to be employed as instruments for endogenous rather than exogenous development (*Tehranian*, 1994), focus on participatory modes of communication and development, rely both on traditional and modern media, promote both vertical and horizontal channels and take recourse to appropriate than expensive, imported technology.

Reaches Grass–roots Workers

Yet another factor to note is that communication reaches the grass roots workers. The fact, moreover, has to be accepted that though the influence of modern communication is great yet the need is for the promotion of rural interaction for which due importance has to be given to traditional and folk media.

Thinking about communication has to be confined not only to modern technology and traditional media but also to the improvement of the quality of the field and grass-roots workers because the effectiveness of the impact of communication ultimately depends upon them.

Thus, communication for development has to ensure such integrated approach and, more importantly, to work towards enhancing the motivation of extension workers for rural development. These workers are communicators as also agents for bringing about behavioural change by transmitting information, persuading, motivating, educating, by keeping in view the social and cultural heritage of the people, by building up trust, confidence, consensus, by promoting cooperation, cohesion and by helping to resolve conflicts.

It is the field workers who, by integrating and coordinating their work with the mass media, can lay the true basis for accurate communication and understanding among the people about the development objectives to be achieved. Considering that absence of inter-personal communication is generally the basis for inaccurate understanding between people, planned commnication strategies need to lay emphasis on promotion of one-to-one relationships because farther the medium diverges from the one-to-one relationship the greater is the difficulty of communication.

The broad principles of inter-personal communication that need to be emphasized in socioeconomic development are to respect the people and to give them the opportunity for reciprocating irrespective of whether they be ignorant or illiterate (*Mathur*, 1994). Moreover, for the vast rural masses the need is to involve the villagers and avoid : (a) programmes that are boring and loaded with more information than can be digested; (b) language that is unintelligible to rural folk, (c) programmes that are not their own, and (d) programmes that lack creativity, innovation and personal touch (Saxena, 1993).

Encourages Involvement and Participation

The nature of communication in the development context is that it should not concentrate on propaganda aspect only because propaganda means the spreading of a particular point of view, an ideology or an objective whereas the true communication aims at involvement and participation of the people by informing, educating, entertaining them with a view to changing their outlook, their approach, their behaviour in the crucial task of planned socioeconomic and cultural development.

The nature of communication as determinant of the type of development ordains that it should excite, educate, entertain, involve the people for innovative, creative actions for achievement of personal, community and national objectives.

In sum, the communicator's ultimate goal should be seen as the betterment of man, both as a cultural entity and with the potential for contributing in many ways to the enrichment of the community of which he is a part. To reach that potential the communicator needs to be informed and educated and given the opportunity to participate fully in socio-cultural activities, including communication itself.

Communication is Technology Bound

One of the main functions of communication is to stimulate attitudes conducive to innovation in science and technology and thereby improve productivity.

In the field of science, communication media sensitize audiences to the need for scientfic knowledge in providing scientific development and encouraging scientific literacy.

The development of science and technology calls for the parallel expansion and more rational use of suitable communication and information structures. Conversely, the development of the latter is linked with the constant progress achieved by scientific and technological research.

Communication includes both infrastructure and technology : a set of means and materials being used to help arrive at the desired goals.

In recent years progress has been achieved in the development of communication systems due to the exponential growth in technology and to an increasing knowledge of the ways in which communication functions within the society.

Guarantees Systems for Dissemination of Information

There is an actual explosion of communication possibilities. However, high levels of technological, scientific, educational and cultural development can not be achieved without guaranteeing the existence and proper use of systems for the production, conservation, dissemination and transfer of information, and also of suitable communication systems which must fit organically into political and socio-economic systems of the society.

Affected by New Technologies

It is the convergence of the technologies of communication and computers which will have the most profound effect on the communication system and on the future of society itself. The evolving and new communication technology will affect and change life styles of the people in India as radically as the introduction of the Maruti motor car did. The lives of the people of India are and will continue to be shaped by the communication technology which today bring to the citizens the images of this planet and beyond.

Communication is a field in which the parameters both technical and human are constantly changing. As such solutions have necessarily to be planned carefully keeping these parameters in view and more attention paid to the management of communication systems, institutions and programmes, so that they benefit from modern management methods, improve their accountability, and coordinate their activities more effectively.

Communication is for Social Change

When one talks of communication in terms of society, culture, development or science and technology, one has essentially to ask what is the ultimate goal of each and of all of them. Simply speaking, they all purport to contribute to bring about change for the betterment of society, to play a part in bringing about social change.

Modern communication is of central importance to society and public interest. It is a means of enabling the government and the public and private undertakings and businesses to establish and maintain contact with the citizens. It is one of the chief links between the leaders and the masses, whereby the latter could be informed of the projects and activities and involved in discussion about them.

Prerequisite of Governance

If today people in India are getting more difficult to understand and govern, it may be because the policies, plans, instruments and structures of communication no longer correspond, as well as they could, to the present day world. Communication is thus the prerequisite for better governance and the reason why public participation in the communication system should be guaranteed. Such participation would enable the media to achieve greater efficiency and serve national development particularly the development of education on the one hand and enable, on the other, communication to promote interaction and the transmission of information between individuals, the government, the public and private undertakings and businesses as also social, welfare and political organizations.

Fundamental Social Process

Communication is a fundamental social process underlying any social change, and has necessarily to be a part of any plan to improve human and national life. Its development becomes further imperative since individual improvement, social organization and growth also demand communication. In this respect two forces work : one pushing man to communicate and unite with his kind to form a society, and another which induces the society to set up for its own operation and its self-expression, over more perfect communication methods leading to an attempt to create constantly improved social structures.

The communication process is one in which information and ideas do not flow only on way–from the top to the bottom or from summit to the base–but rater two–way and interactive since communication is a means of social linkage, enabling information and ideas to circulate both ways from the source to the receiver and from the receiver to the source. Thus communication replaces the monologues of the few by the dialogue of the many and vertical communication becomes circular. Such a system makes it possible to bring communicators and receivers together by means of feedback machinery.

Communication is thus a social and cultural process in which a large number of people participate. It needs to be supported by society as a means of its own overall development and as an essential ingredient for social welfare.

System Change Tantamount to Social Change

It is the modes and form of communication which transform or reduce to a stereotype the modes and forms of community life. Any change in the system of communication is tantamount to a social change.

History bears ample testimony to the fact that civilizations, empires, institutions–of whatever sort–grew and crumbled in rhythm with the evolution of more powerful and more effective means of communication. And recent history has shown that even though modern means of communication be denied to or withdrawn from people, yet resort to the traditional media has helped people gain freedom, independence from foreign rule.

Mobilization for social change of groups and individuals in towns and villages will be much easier if the people participate in the decision-making process and are involved in planning and implementing community activities.

Gaps, Impediments to be Faced

However, there are still gaps, imbalances and distortions in the development and use of communication for social change in India. Adequate transmission facilities are not available and provision of economic resources for the purpose still poses problems. On the other hand illiteracy persists and is a basic impediment in the growth of communication. However, communication within small rural communities can counterbalance or complement the mass media by use of light technologies whose relative cheapness makes it possible to decentralize the production of messages and their easy dissemination.

In present day society all individuals come under the influence of communication media whether electronic or traditional, and in both urban and rural areas. In fact about a third of our waking time is spent in their company. And since communication affects people in their everyday life it follows that the media and their content cannot be viewed in isolation from sociopolitical and cultural considerations.

Combats Isolation

The media constitute an effective means of combating the isolation of country dwellers, helping them to become aware of their citizenship and of their membership of the nation, imbuing them with a sense of nationality and creating a will to share the task of building the nation.

Distances need be no obstacle in such a task since computers in various parts of the country can be linked by satellite.

When media are used together in systematic combinations the resulting product is stronger, more convincing, more forceful. This is because different media have different strengths and weaknesses and depend upon appeal to different senses or groups of senses. It is always advantageous, in reaching out to audiences, to capitalize upon strengths and diminish the weaknesses as the audiences for different media are not compartmentalized and do not exist in isolation. For example, people who watch television also listen to the radio and read newspapers and magazines. Media presentations will be stronger if they acknowledge this fact.

In the modern world countries are developing communication structures side by side with the highly effective interpersonal and traditional information networks since it is widely reconized that media and interpersonal channels are particularly effective for certain types of content and audiences, and that therefore a coordinated use of communication channels may not only be more effective, but also less expensive and wasteful in programmes designed to educate, to inform and especially to motivate. This requires sustained efforts over long periods of time and therefore calls for perspective planning and the creation or reinforcement of necessary structures to undertake such tasks.

Communication is Media–Interpersonal Oriented

Ours is an age of communication which is part of the very fabric of society. It takes place at all levels between people, from people back to government and through many channels both interpersonal and mediated.

Communication in a modern democratic society is the vehicle for involving the people in the social, political and development processes, for facilitating public debate and decision making and reaching consensus on important issues.

The term 'information and communication' is used to emphasize the fact that mass communication and all other types of communication are interrelated and that not only is information essential to enable people to make their own choices and decisions, but effective methods of communication/information are now an indispensable element of national development planning.

Communication includes interpersonal, institutional and mass communication form. It is described as one of those relatively few fundamental and encompassing processes through which virtually any social event can be portrayed.

The communication scene ranges from the promotion of interpersonal networks to the encouragement and rejuvenation of the traditional media to the development of modern media and to the choices among the wide variety of sophisticated technology.

Communication is the sum of all those media channels and institutions that have a technological base. Beyond the mass media, it includes other technological items such as computers, information systems, telecommunications and telephony, apart from traditional media.

The Mass Media

The mass media are instrumental in promoting community participation and reflection of public opinion, encouragement of dialogue between community and service providers and opening of the channels of feed back from the community to the decision makers.

The selection of media, whether sophisticated or simple, should always take into account the desired content, audience and users, and should take place after these decisions have been made.

Media selection and related production of software or content are crucial elements in undertaking communication activities. Among the many possibilities for communication activities are broad-based media campaigns using both the mass and traditional or folk media channels for both awareness creation and programme support as also a variety of communication techniques and channels or a mixture of both.

Selection of most effective kinds of communication activities and channels depends upon the nature of the objectives, the target audience, the media within the geographical area and the local culture.

It is crucial that the message issued through the mass media be synchronized with those issued by the outreach or the extension workers. Without a link between mass media and the outreach or the extension workers. Without a link between mass media and the outreach workers there is little opportunity or feed–back to correct any flaws. To create this link service personnel, community educators and welfare personnel should be provided with communication materials.

The radio has the widest reach in developing countries though television is fast catching up. The communication planners engaged in development programmes tend to face three basic problems in the use of the mass media. One is that the development programmes can rarely specify when their messages should be used. The second is the lack of follow–up by interpersonal communication or printed or visual materials. And, thirdly, is the difficulty in tailoring programme content to the needs different socio–cultural or linguistic groups within a country.

Annexure 1 provides some insights into and relationship between communication media, development and social change and Annexure 3 deals with Research and Research methodologies which should be the basis for all media content and planning for social transformation.

Media for Expression of Cultural Diversity

Communication media can be an effective instrument to help the nation improve awareness of its cultural identity and to help achieve its social, political and other objectives.

Communication media are, moreover, meant to provide room for expression of the cultural diversity within the framework of cultural unity, so as to make that diversity something that enriches and promotes understanding rather than be a source of dissension and division.

The main purpose of democratizing cultural and communication life is to stimulate creativity and to encourage self-expression in individuals, groups and systems and to develop a sense of individual, cultural and national pride.

When the mass communication media are used for the transmission of cultural values which are constantly imbued with life by the creativity of the people, they are a means of keeping traditional cultures alive, for they are themselves a form of cultural expression, and they can be an invaluable instrument for the assertion of the country's national identity.

Folk and Traditional Media

Seen in the historical context, the folk/traditional media existed even before the advent of the modern mass media. It is through the utilization of these media that some of the most dynamic religious movements spread far and wide. In recent times their significance was further highlighted when in spite of the ban on and denial of access to the use of mass media the independence movements of the developing countries like India did succeed thanks to the use of the folk channels of communication. Yet another example of the use of these culture based media has been their use in election campaigns in developing countries.

The *raison d'etre* of the folk/traditional media is that they are essentially community based. Not only they use the local language and dialect but the performers also belong to the community. In addition, they are so much less expensive to mobilize compared to the mass media. Actually, it can be said that deployment of more resources for the use of folk/traditional media would result not only in cultural development but also help create through the performers a corps of outreach workers for conveying development messages to local communities.

Annexure 2 outlines the role of folk media in communication for development and social change and provides guidelines for their use.

Interdependence of Traditional, Modern Media

There is interdependence between the traditional and modern means of communication. In combination these media bridge the gap between the various social groups caused by exclusive use of advanced technologies. As such better combined use of modern and traditional communication systems in both rural and urban areas is desirable with a view to ensuring improved acquisition of knowledge and the full flowering of national culture.

As a rule care should be taken to the effect that the modern systems of communication are not superimposed on traditional systems and are not insensitive to the latter.

Interpersonal Communication

Interpersonal communication is the key to trust building in support of development policies and programmes. Apart from extension or outreach workers the service personnel have to be perfect in interpersonal communication for it is their courtesy and behaviour that in the final analysis wins over the people or alienates them.

Interpersonal communication is important since its role is not merely to create awareness but also to help support services and bring about behavioural change at home and at service points. Face to face communication is the only way to counsel individuals of the target groups, to respond to individual needs and to facilitate decision making.

Actually, interpersonal communication is at the very heart of a communication strategy in support of development. It requires :

(a) understanding of subject matter;

(b) empathy, knowledge and skills in group and individual psychology and group dynamics;

(c) listening skills;

(d) favourable attitudes to work with people, as a helper, not as an authority; and

(e) sensitivity to the views and needs of others.

Training in interpersonal communication techniques is essential for all communicators.

The use interpersonal intermediaries along with other forms of communication is important. Reliance has to be placed on using influential members of the community, outreach workers and celebrities in coordinated activities.

Social and cultural organizations and traditional gathering groups for recreation and ceremonies, mothers clubs also need to be mobilized for interpersonal communication.

The focus group technique can be used by communicators at the community level. This technique stimulates the expression of opinions and basic attitudes among the beneficiaries or clients. Client opinions give insights into the type and content of the messages that should be used in subsequent communication intervention. Most importantly, the technique provides immediate feed–back and reaction concerning identified topics, problems, issues.

Guiding Principles for Integrated Use

The guiding principles for the integrated use of mass media, folk/traditional media and community and interpersonal work in India may be enunciated as follows (*Mathur*, 1964) :

1. Communication support should be planned at the time of the formulation of policies and programmes and communicators should be involved in the process right from the beginning.

2. Communication support should be conceived as a process so as to ensure people's participation in spreading awareness of the problems at the personal, family, community and national levels and the services, facilities also made available to solve them.

3. Any and all communication activities designed should be strictly in accordance with the social and cultural background of the people and in their language(s) and dialect(s).

4. The content of the communication messages should be based, as far as possible, on a study of the levels of knowledge, attitudes, belief, values and norms of the people.

5. The communication strategy should be so oriented as to embrace, and be associated with other concerns of the people so that

the services and facilities provided are understood as being related to the overall well-being of the people.

6. For the conceptualisation of communication work, which is both interdisciplinary and inter-sectoral, a corps of specialists needs to be trained in special ad hoc courses as also by integrating communication content in the regular teaching and training programmes for planners and decision makers and in communication training institutions.

7. The impact or effectiveness of communication should be studied not merely in terms of the increase in the levels of knowledge or change in attitudes but, more so, and more concretely, in terms of acceptance of services which are but one of the significant factors in achieving the goals of policies and the programme undertaken for achieving them. Annex 3 is the communicators guide to research and evaluation.

8. All communication work should be in the people's own image so that they see themselves not merely as targets of work planned by others but as part of their own social and cultural milieu, using their languages and dialects, their own traditional ways of communication and above all, their own people.

9. Communication support should be ensured as much for activities designed and developed for and in association with various sections and groups of people at large as for children and youth frequenting various educational institutions.

10. Communication for development programmes should envisage also enrichment of traditional, cultural and folk media.

For following the above guiding principles it has to be ensured that the actions taken are in conformity with national development policy, that proper structures are created for implementation, that supportive research and training has been undertaken. Moreover, the workers at all levels, from the top hierarchy to the field level workers have to be properly briefs about the aims and objectives and the strategies developed to achieve them.

Communication Implies Responsibility

The dual responsibility of communicators and the media is to develop the capacity to understand and to project the cultural artifacts, cultural and social values and norms in a climate of change and modernization, and to accept the responsibility of receiving, processing and transmitting and explaining the cultural and social values to other societies.

Any action aimed at promoting participation in cultural life will have to encourage opportunities for meeting, for dialogue, for the free exchange of information, ideas and knowledge and also for group cultural activities. It also entails a wider access to an increased participation in communication.

To Protect, Preserve Cultural Heritage

The responsibilities of a communication system are to protect and preserve a cultural heritage on the one hand, and on the other, to provide for free exchange of information, ideas and knowledge between cultures.

The media responsibility is to make an important contribution to the communication process by increasing access to materials and opening up the possibilities of feedback and dialogue between producers and audiences.

To Correct Imbalances, Gaps

Communication has further to be related to the social dimensions of its infrastructures so as to correct imbalances or 'gaps' of varying dimensions as between the rich and the poor, the literate and the illiterate and between the urban and the rural populations.

Wider public participation in communication activities might very well widen the base of active support to and participation in a society's efforts at overall development.

To Share Task of Nation Building

Media in India particularly should share more with the government the task of nation building. The mass media bear a responsibility for contributing to the common task of nation building and to further the development of the cultural identity of people and ethnic minorities, thereby ensuring national cohesion and creating abilities to derive the utmost benefit from enriching influences coming from outside.

A central feature of media responsibility is to provide the people with their own culture and spiritual food so that they themselves could become aware of their responsibilities as members of the society.

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To Contribute to National Integration

Since communication is an important tool for achieving national integration it is necessary to learn what values and felt-needs are shared by particular cultures at a particular time; explain various ethnic cultures to all to promote a deeper understanding amongst all the people about each other, seek to obtain the mutual enrichment of the various cultures in creative and imaginative ways; seek to counteract such external cultural influences which stand in the way of endogenous cultural development and to develop a national culture based on similarities, common values and mores.

Maximum participation and involvement of the population for any development is necessary. However, the participatory model of communication is more difficult to structure and implement than is a transmission-persuasion model of communication.

Social communication may take place spontaneously among individuals or be organized and conducted through institutional channels. It is, however, the responsibility of decision makers to plan to include not only the media of mass communication but also other institutions designed for the transmission of information-political agents, extension services, cultural animators, educators, social services.

2

THE DAWN OF INFORMATION–KNOWLEDGE AGE

Modern Indian society is emerging after traversing the agrarian stage (where economic activity was marked by ample material base, but with little knowledge) and then tasting a type of an industrial revolution (with its mass production methods based on energy). In India also it may now be called the Age of information and Knowledge marked by new technologies in which science and knowledge are becoming the critical vectors of a "value added" economy.

Global Networks

Global networks now provide not only information but generate new knowledge which has a part to play in the processing of products. Thus, non-material resources such as software, computer application programmes and services are becoming the raw materials and the real wealth of this new information and Knowledge Age-based society.

The traditional distinction between industrialized countries and the developing world like that of India now seems less and less clear. The developing countries have more economic break throughts and have managed to compete with the industrialized countries in a number of areas.

Interconnected World

As regards communication the world has become more complex and a multitude of interconnected technological, political, cultural economic and regulatory problems have emerged.

Analysis of these problems has become all the more difficult since the new information and communication technologies have been integrated into unified, interconnected networks which have profoundly changed the conditions and the means of production, forms of distribution, and society's ways of consuming and functioning.

Features of New Age

These changes are the signs of a new civilization based on information and knowledge. This new information and knowledge age is in the process of rapidly replacing the industrial era and the factors which are contributing to the development of this new society can be enumerated as follows :

(a) The surge in the digital revoloution and convergence technologies.

(b) New communication techniques : (i) material objector or tools and procedures; (ii) non-material activities like knowledge, content and symbols required for creating, renewing or transmitting information.

(c) Communication techniques : (i) telecommunications, (ii) electronic data processing (personal computer, (iii) audiovisual products and activities like broadcasting, cinema and electronic industry.

(d) The coalescing, converging of telecommunication, electronic data processing and audiovisual products leading to emergence of three strategies, viz., multimedia, merger of the information technology, and television and computer networks,and

(e) The emerging changes that will demote computers and their operating systems to the status of television sets so that one will be able to walk up to any computer and turn in ones own files, ones own electronic life.

Emergence of Net Economy

For the time in the history of history of humanity non-material transfer constitutes the heart of the global exchanges of capital, ideas and images which make up the new economy. This is transforming the underlying framework of human activity and the function of states, nationals boundaries and cultural foundations is beginning to be called in question.

This new economy may be termed as the Net Economy. It exists in thousands of sites that are face of world economy. The new economy on a global scale has several features :

(a) It is global.

(b) It is networked. Thus products from one country are available in another through cyberspace.

(c) It is based on information. In today's knowledge based economy, intellectual capital drives the value of products.

(d) It decentralizes power. Technology has become a force for democracy and individual empowerment. The symbol of digital age is the WEB with countless centers of power all equally networked.

(e) It rewards openness. Information can no longer be easily controlled nor ideas repressed nor societies kept closed, and

(f) It is specialized to the extent that products can be individualized and not just mass produced.

Challenges of Information, Knowledge Society

The new information and Knowledge Society is posing a number of challenges in matters of development, content, globalization, culture and manpower.

Development

Because of (i) increasing possibilities for spreading and sharing knowledge, (ii) enlargement of the sphere of dissemination, (iii) cutting of distances, countries like India are placing more emphasis on access to education and growth factor.

Content

The cost of services results in a gap between those processing the means of financial access to the content (information and knowledge) and those who are able to accede.

Globalisation

Because of globalisation of communication the governments are facing the challenge of widespread of satellites and other global networks. Alongside is the virtual disappearance of national territories since space has lost its articulations and boundaries. This unprecedented development-disappearance of space and territories-is quickening the pace of elimination of political borders and the emergence of new rights resulting from the use of information technologies.

Culture

The opening up of the Indian society to the world at large is also quickening the pace of industrialization of culture because of the formation of conglomerates on a global scale : cable, telecom, information and audiovisual fields.

History shows that the countries which fail to take advantage of the opportunities offered by these new technologies in the fields of information, electronic data processing and the communications will inevitable suffer slower development and decreased power of 'negotiation' in the new world communication landscape *Unesco.*

Manpower

Since the dawn of human kind, there have always been geniuses born to general population at random intervals. But geniuses have rarely married other genuineness because there were so few and it was unlikely they would meet. Lately, however the demand for geniuses is growing exponentially, along with their breeding opportunities, thanks to the technology industry. Like giant vacuum cleaners, Microsoft, Hewlett–Packard, Intel, Sun Microsystems and companies of the kind have been sucking up the brightest people in the world with India being no exception *Unesco.*

Each generation of geniuses will be smarter and start working younger. It is possible that the high-tech companies of the future could be managed entirely via inter- fetus telepathy!

The demand for skilled employees-especially technology people–will outstrip the supply for the next hundred years. Managers in India, like other parts of the world, will not be able to tyrannize their rare and valuable technology experts. The balance of power will continue to shift. In the next generation, engineers will rule corporate world *Unesco.*

3

NEWTECHNOLOGY : ITS SCOPE, PROBLEMS AND IMPLICATIONS

The advent of modern technologies provides instant communication and is revolutionary in character since it is changing the concept of nation states and breaking old family ties and the way that people live.

For the first time there are governing above the earth over 200 satellites which have made instantaneous communication possible from one side of the earth to another.

Major Technological Changes

Major changes in world communications are arising from the impact of new information and communication technologies on cultural life and functioning of society; the actual character of the information society and its promises and the changes in terms of development and cultural, social and political expectations.

Moreover, the major technological changes which will enable one to store and transmit information of any type-voice, image, text-free from any constraints of space, time and quantity are the digitalization for images, sound and data; digital compression and the growing power of electronic components.

Digital Revolution and Globalisation

The digital revolution is now transforming the world as did the industrial revolution. Two million transistors can be etched on wafers of silicon. On these microchips, all the world's information and entertainment can be stored in digital form.

The microchip has become the dynamo of a new economy, global in scope propelled by the power of microchip. Intel is responsible for the amazing power and innovative potential of the microchip. One will continually find new things for microchips to do that were scarcely imaginable earlier. Every month, four quadrillion transistors are produced, more than half a million for every buman being on the planet.

Globalisation and e-Commerce

Such technology has shrunk the world into a global village and given birth to the process of globalisation and enabled businesses and society to evolve, to radically change. It serves as a road map which indicates how to derive profit from the manifold opportunities offered by the numeric age. Undoubtedly, in the next decade or so there will be still more radical changes and the convergence of technologies (the computer, internet, electronic messagerie, and new individualized electronic devices) have already brought about an irreversible and fundamental change. India is already witnessing the impact thereof.

Thus, electronic commerce has brought together buyers and sellers as never before. Individuals in their daily lives will experience the change brought about by numeric revolution and specially because of the facility in the internet that enables one to organize work.

The virtual shopping mall known as e-commerce has come into being and people can surf for products and services which are available through retailers web sites on the internet. Steady e–commerce growth can be envisioned in India in the next few years. However, countries which have one language have a great advantage over others in e–commerce. For example, in USA the market is unified by language and currency. However, in European and Asian countries the retailers will remain either nationally confined or at best regionally. This is because people prefer to surf and shop in their own language and currency. The digital TV with its interactive possibilities would indeed speed up the growth of e–commerce.

As a result the most traditional societies are undergoing change and the traditional pastimes are yielding place to television shows and videotaped programmes as would be evident in the countryside and slums in the developing countries.

Moreover, the global market place has emerged and is becoming indifferent to national borders. The global market place is now different in levels of finance and capital flows. Geared as it is to electronic money–money that only exists as digits in computers–the current world economy investors can transfer vast amounts of capital from one side of the world to another at the click of a mouse. As they do so, they can destabilize what might have seemed rock solid economies as happened in East Asia.

In India what would hinder the development of e–commerce–commerce between business and businesses on the one part and between businesses and consumers on the other–is lack of computer density and high telecommunication charges. To promote e–commerce both the public and private sectors would have to take steps to manufacture affordable low–cost personal computers and lower telecommunication charges. Moreover, one factor that the Government would have to pay attention to is the realization of taxes on the e–commerce sales.

Globalisation and Global Village

The emergence of new technologies has led to globalization not merely in economic terms but also in political, technological and cultural terms.

Globalisation is a reality and is influencing intimate and personal aspects of our lives. The traditional family systems are becoming transformed, particularly as women stake claims to greater equality. Globalisation really is the reason for the revival of local cultural identities in different parts of the world so that these do not get absorbed into the global arena. Actually nationalisms spring up as a response to globalising tendencies as the hold of the older nation states weakens.

Globalisation is not all positive. It has created a climate of winners and losers. Thus the share of the poorest fifth of the world's population in global income has dropped from 2.3 per cent over the past ten years. The proportion taken by the richest fifth, on the other hand, has risen.

However, globalisation has for the first time made people realize that non-Western countries influence development in the West which needs not only trained manpower produced by the developing countries but also their markets to sell goods and services.

Environmental Pillage of Global Village

Though such has been the trend of globalization and technology is resulting more and more in environmental pollution, yet in many developed countries, which contribute most to such polution, safety and environmental regulations are low or virtually non existent and transactional companies are contributing to the virtual pillage of the global village.

Factories and farms, cities and cars have messed up the world. Technology is, incidentally, also our chief source of information about such a problem. We know about the world's environmental ills because exquisitely complex inventions tell us about them.

Technology is everywhere, inseparable from our humanity. Discussion of the course ahead cannot be reduced to sterile dichotomy of a technological fix versus a change in values and habits. Instead we will have to embark on a vast learning process that will involve both. And we will need a new sense of environmental responsibility–an environmentalism that uses science and technology, understands the enormous evolutionary changes now taking place, and accepts the new role of the human race.

Most of products and production processes of modern society are unsustainable. We are today releasing genetically modified organisms into the environment before we have adequately assessed the risks. Indeed, many modern technologies threaten our future no less than nuclear weapons did, and prompt the same question : what ethical guidelines should govern our use of new technologies we develop.

Technology was once considered as the enemy of environment but now it is providing new solutions to the planet's most pressing problems. Now technology equals solutions. It is being used to prevent environmental damage, manage fragile ecosystems and devise ecofriendly products and manufacturing methods. Relying on everything from satellite systems and bio-engineering to the resilient processes of nature itself, scientists are learning how to clean the air and water, produce non polluting fuels and grow more food.

But none of these techniques will forever eradicate the threat of ecological catastrophe. That will require transformation in human behaviour-leading to a new willingness to assume responsibility for the environment and hold consumption of resources to sustainable levels but fruits of technology combined with the needed change in attitudes could very well enable us to have our earth and use it too.

Pollution-free Automobiles to Rescue

Biodiesel automobiles are being promoted in Germany. Biodiesel is fuel made from the common rapeseed plant and offers the same engine performance and mileage as conventional petroleum-based diesel but with a fraction of the harmful emissions that contribute to global warming. The production and combustion process of 1 kg. of conventional diesel emits more than four times as much carbon dioxide and other greenhouse gases as that of 1 kg. of rapeseed biodiesel. This alternative fuel is selling better than ever with some 800 service stations dispensing 100,000 tons of stuff in 1998. Car manufacturers such as Mercedes, BMW, Skoda and Seat are in the process of modifying their diesel models to handle this alternative fuel.

Biodiesel has the added advantage of being a renewable resource. Rapeseed can be converted into fuel through a simple process of distillation.

While biodiesel is an ecologically sound alternative to gasoline, it is not yet cost efficient. For biodiesel to become competitive the rice of a gallon of crude oil would have to increase by $1.33. That would mean a 4% cut in Germany's carbon dioxide emissions from diesel automobile exhausts.

While Greenpeace together with Swiss engineers has produced the fuel efficient SmILE car, a French engineer, Guy Negre, has gone beyond diesel. He has invented an engine that not only runs on thin air, but improves air quality also. Negre's ZERO POLLUTION URBAN TAXI covers about 200 km on 300 liters of compressed air which is stored in tanks similar to those used by scuba divers. Designed specifically for inner cities where stop–and–go traffic accounts for a significant portion of polluting emissions, ZIP vehicles inhale a fresh supply of air in and about a minute at specially equipped service stations or recharge in four hours at home using a small electric compressor. The Zero Pollution Vehicles are also fitted with a carbon filtering system that sucks in dirty air during braking with the result that the air emitted but the ZPV engine is actually cleaner than of the surrounding environment. mexican government has ordered 40,000 ZP urban taxis.

Internet : Key to Technological Changes

The key factor in forging technological changes has been the internet which is the pivotal point of the information Superhighway.

The information Superhighway is already a reality with the Internet and in the near future it is not the cable or the telephone companies that will provide the advanced communication capability of the future : it is the Internet. The Internet is an ever growing set of connections between electronic information systems and data bases around the world.

Internet is an extremely large, loosely coupled network maintained by hundreds of different organizations worldwide. It is based upon a computer network protocol called TCP/IP.

Though originally financed by the US Government and educational institutions until it grew too big, it is now managed by a consortium which bills Internet service providers who maintain one or more computers connected to the Internet full time. To dial into the computer one has to use a modem and a serial version of TCP/IP (SLIP), or Point–to–Point Protocol (PPP) and thereafter access to a variety of Internet access programmes.

Working of Internet

The Internet is the closet thing to the information Superhighway. Once the highway further develops, individuals and companies will find applications for multi–media communication. In fact though the Internet people within the country could come together intellectually, know one another better through exchange of information, ideas and opinions which are the cornerstones of a democracy. The opening up of cyberspace in the service of individual citizens and groups heralds, in fact, the birth of cyberdemocracy.

Six main activities are already available on the Internet (*Fitzpatrick*, 1995). These are :

(a) send and receive electronic mail (e–mail);

(b) send and receive computer files;

(c) run programmes on other computers;

(d) search for information in files and data bases;

(e) take part in discussion groups; and

(f) play games and communicate live to others.

As the use of Internet and other on–line resources develops, the roles and responsibilities will become more defined, for example (*Naze*, 1994-95) :

(a) Internet work engineers;

(b) security experts;

(c) mobile computing technicians;

(d) Internet specialists;

(e) information librarians or cyberians ; and

(f) wordsmiths/graphic specialists.

Birth of 'Internauts'

Modern technology has given birth to a new category of people, the 'internauts'–individuals connected withor using Internet services–Internet which highlights and demonstrates an economic revolution and a revolution of communication and media. However, what is necessary is to pay attention to their influence on education, culture and society. Will these technologies result in immense progress or regrettable regression, in production of individuals or those generating social bonds, in advancing the freedom of choice or submission to the power of merchants, in becoming a superb instrument for advancement of culture or a gigantic agent of dissonance.

Uses, Possibilities of Internet

Today the Internet is the world wide 'network of networks' that are connected to each other using IP (Internet Protocol) and other similar protocols organized in a hierarchical structure. The main network connects regional networks which connect themselves with many wide area networks. Wide area networks, in turn, connect other wide or local area networks.

The main feature of the Internet is its size which is really so big that sometimes it is hard not only for an ordinary user but also computer aficionados to comprehend the complexity of accessing and using it.

The global proliferation of the Internet also holds great promise for exchange of ideas, information and methodologies for socioeconomic development. However, care has to be taken since this system is like an open file which can be retrieved by anyone and which can as well be changed at the user's will so as to infuse subversive ideas and materials.

The Usernet–which is the conversational part of the Internet–already has numerous discussion groups and Internet users around the world already exceed 100 million. Also, computer mediated communication (CMC) via Internet is fast becoming a significant communication medium for technical and professional communicators and modems can be used to access information like demographic data, abstracts from major newspapers and scientific publications, corporate data and data from government.

Some of the most recent advances in the development and use of Internet are in the fields of space travel and aviation. Thus, it has now become possible for those having a personal computer to be able to communicate with the crew of spaceships hovering in outer space. A new global system for communications with airplanes in flight carries the nomenclature Aeronautical Telecommunications Network will help passengers plug their laptop computers into a jack at their seats connected to their home or office computer systems. This system promises to integrate communications between planes and air traffic controllers, planes and airline companies, and planes and other planes. The system would be able to locate an airplane anywhere on the globe, and then choose the best method to communicate with it.

Opportunities to gain access to Internet are increasing rapidly. Any country's educated work force could benefit enormously from knowledge of business and economic trends gleaned from the network. But with greater use of the Internet by the Government and private organization it would become inevitable that, for those who seek it, even sensitive, secret information will become available which the governments or the corporations might otherwise not like to divulge to the people.

As millions more of users flock to the Internet in the coming years, they will find access much easier, more enjoyable and less expensive due to graphical user interfaces. With the new graphical connection through Concentric Network, the Internet is becoming accessible in full living colour, motion and sound to anyone with a PC and a telephone line.

The Internet is the prototype for future communication and it is likely that private networks modeled on the Internet also develop and ensure control and security guarantees that would allow conduct of business (*Babock*, 1955).

There are two main categories of Internet access products. The predominant type lets the single user or client access the Internet and then browse, search, send electronic mail, or retrieve information. The second product category, and one of the fastest growing, is server packages which let users provide their own service over the Internet.

Innovative Uses of Internet

A novel use of the Internet has been in electioneering. In August, 1994 Richard Hartman launched the first political campaign conducted entirely over the Internet, the web computer network, and was able to raise $100,000 for his campaign though he had no previous experience. Since then his example has been followed by many others. Indian political parties and politicians have also become aware of this and in the not too distant future in the early years of the 21st century they will be having recourse to it to reach the electronate.

That modern technology can connect government to business and educational institutions and private medical practitioners had been proved by the Oklahoma (Japan) experiment where the "One Net Plan" enables all parties to exchange data and open the way for the information Superhighway.

Another example is from Iowa (USA) where the 2800 miles fiber optic network aims at educational excellence. in December, 1994, 54 high schools were linked to the network.

On the other hand, the experience so far in USA, Europe and Japan has shown that primary and secondary schools are increasingly connecting their students to broader national and international computer networks. In USA and Europe the digital landscape is said to be permeated by pornography and there is a move that steps be taken to check this.

Encyclopedia Britannica North America launched Britannica on–line on the World Wide Web along with the reference guide which contains 15 percent of the 23,000 graphic found in the paper edition on the on–line service includes he 1994 Britannica Book of the Year almanac and Merriam–Webster's Collegiate Dictionary 10th edition. Since then other encyclopedia have followed suit.

Broadcast television networks have taken advantage of the Internet computer network as a means by which to distribute information about shows, as a marketing tool, and as a way to communicate with viewers. CBS was the first of the major networks to set up a dedicated site on the Internet. Now CNN provides access to world news, sports, business, at and entertainment through Internet.

The Voice of America also launched itself onto the Internet via a new service that lets users in 15 countries download sound files containing its broadcasts. The Voice of America also is planning to have written transcripts of its broadcasts available in their original languages via a local server, where Internet users worldwide can download them.

The Japanese Broadcasting Corporation is already experimenting with a scale model of twin satellites to enable simultaneous telecast in different languages of the world.

Many newspapers in Asia, as in the West, now also have their special Internet editions which can be accessed by readers in foreign countries.

In the West many in the radio business are concentrating on promoting themselves to listeners by establishing an on–line presence, either on commercial services or the Internet (*Wilke*, 1955).

Apart from the above, Internet uses innovation. The latest trend is the cyber bars cropping up in Thailand where clients have access to Internet while having a drink and in Hong Kong cyber hair cutting saloons have appeared where clients could have all kinds of information on Internet instead of reading the traditional magazine or newspaper.

A highly significant development is that Internet has become available in 75 languages through a software called TANGO. One has only to choose the language and the software could help access the document or information in that language.

Linking TV, Telephones

The AT&T has created a device, the Television information Center, that connects any standard television set to the telephone network opening up households to messaging and information services.

Everyone is also going to be affected by the new digital media and there will be a major change in the way television is produced and distributed and information is transmitted.

Large business houses intending to serve their customers are taking recourse to Internet connections. There might thus be an expansion of televised shopping channels.

Individual, Business Accessibility

Access to the global network has traditionally been through standard telecommunications lines but soon local cable television operators will be able to offer a physical link to the Internet to a much wider range of users. This convergence of technologies combined with deregulation of the cable television industry, promises the development of alliances between the providers and users of information.

Anyone with a PC, a modem and some financial resource can get a ride on the Internet. Really anyone enterprising and ambitious to make a mark should be participating in such a cyberdemocracy. No Indian business in the future will be able to compete in the global arena without employing the electronic services which will become increasingly available and affordable to anyone with a computer and a phone line (*Seideman*, 1995) because electronic connections with customer via the Internet will not only be important but critical. In addition to providing customer services, the Internet could also be used to make internal operations of far–flung organizations more efficient. The state will be set for businesses to take resort to cyberspace and nay business that ignores it will be ignoring its own future. Indeed in the cyber age the business corporations will not be the same; in fact in the near future they will become 'cybercorp' *(Martin,* 1995).

Internet Problems

The problems that Internet poses relate to language situation and absence of control on content. Unless Internet can be used in all languages with a different script than the Roman one, vast masses could be denied its benefits.

The lack of control on the content can be harmful since the introduction of multimedia in schools would be like letting a would among a herd of sheep because it would threaten the culture of writing linked with the culture of reflection, thinking. In addition is the problem of exposing them to pornography. While such may be the handicap yet interactive technology can play a role in reconstituting with accuracy monuments, cities, battles and the ancient customs and traditions to the benefit of the students.

Other problems with the Internet are those of overload of data and traffic jams besides its tendency to become a commerical medium vis a vis a to designed for free and friendly exchange of information.

Security Problems

As more and more individuals and businesses discover the Internet, the opportunities for network related crime will multiply and create obstacles to vibrant electronic commerce : the safety of transactions and intellectual property completed in cyberspace.

Indeed security problems are an undeniable fact of life on the Internet whose very openness makes it an unmatched vehicle for reaching millions of customers at minimal cost.

However, with due planning companies and consumers could protect themselves by safeguarding their computers connected to the Internet networks and the Internet. To meet the security challenge, large companies are resorting to the concept of firewalls-software programmes consturcted of security measures, such as password authentication that would keep the public Internet away from the company's network and data bases. Actualy the Wells Fargo Bank in USA became the first bank to secure credit card payment system and others have followed since.

Morality and Subversion

Besides the security aspect, yet another problem in the proliferation and use of the Internet is that of inclusion of sites which may be characterized as morally degrading or subversive in nature.

While there is also a phenomenon of vulgar and abusive e-mail from mischievous people, yet e-mail sometime can also serve the purpose of free speech and democracy. Thus the world first hew of the Tiananmen Square happenings throughout the Internet messages transmitted from China.

As for subversive information from the national point of view the policy makers have to ensure that while it would be difficult to check anybody putting in subersive ideas and viewpoints in the Internet system, safeguards-legal and ethical-are thought of in advance to counter such a development.

Developing Legal Framework

The great advances being made in the use of Internet are also bound to create legal and moral problems. As for the legal aspect, situations are bound to be created where it would be necessary to arrive at appropirate legal standards to protect he multipurpose interests of users of cyberspace. In addition, the legal frame work will also have to be developed for control of the emerging information structures in many countries.

Apart from legal standards attention has also to be paid to international technical standards for Internet technology so that problems of operation may be minimized.

How to address the issue of access rights to national information infrastructures is bound to be critical in the radical landscape of cyberspace where users play interchangeable roles and every consumer may also be a producer (Perritt 1995). Countries like India will have to adapt their legal systems to technological change.

Laws may also have to be designed to require telecommunications companies to design their systems to make law enforcement wiretaps easier as also to restrict the use of private data encryption software.

A Challenge

Competition now rages between software companies to capture the Internet market and imagination of the `internauts'. Microsoft's software operates 9 out of 10 computers the world over and is bringing personal computer owners technical innovations and consumer value. However, JAVA- the universal programming language owned by Sun Microsystems–poses a challenge to Microsoft and if JAVA catches the imagination and minds of programmers then computers could one day be run without the need for an expensive operating system like Microsoft.

Other Technological Developments

Handheld Phones, Computers

The British computer maker PSION makes sleek handheld computers. PSION has entered into an alliance with three of the world's telecommunications heavy weights : Sweden's Ericsson, Finland's Nokia and Motorola of USA. These three firms account for 70% of the global sales of mobile telephones. The alliance is called SYMBIAN and it will license PSION's software as the underlying technology for a new generation of devices ranging from mobile phones that receive e-mail, surf the Internet and even pay for transactions, to hot computers that go onling automatically. These will handle data as well as voice, and constitute a market rivaling today PC sales. Microsoft has also come up worth wireless knowledge to produce hardware and software to enable mobile phones to connect to Internet.

Nokia plans to market its 9110 Communicator. It is a device about the size of a large mobile phone with a flip-top computer screen capable of composing faxes, sending and receiving e-mail and even surfing the Internet.

Atcatel of France is already marketing a phone called One Touch Com, which has taken all the functions of a palm-sized organizer, such as address book and scheduler, and installed them in a handset small enough to slip in a pocket.

Satellite Phones

As with almost everything else, these days the most promising future growth area for the low-orbit satellite phone market will be the Internet. If the Net keeps expanding at its current pace, the demand for digital connections will skyrocket.

Steps are being taken to make satellite phones a practical, popular means of 21st century communications.

A revolutionary new system that would blaket the heavens with 77 communications satellites is in the offing. It would bounce cellular calls from one to another, and then beam data stream downward 780 kilometers to one of 12 earth stations where the call would enter terrestrial telephone network.

The market for satellite-based services promises to be vast. Using existing satellite communications technology, Magellan–a subsidiary of Orbital Sciences Corporation of Sunnyvale, California–is targeting hunters or outdoorsmen who would be able to send and receive page messages from even the most remote corner of frozen Siberian tundra.

Also on the horizon are regional satellite systems in Asia, Africa and the Middle East.

Possibilities of Mobile Phones

Blue Tooth is a technology being developed by a consortium of mobile phone, chip and computer makers. When this technologies developed, a laptop user will be able to transfer calls via a mobile phone even though the phone is inside a briefcase and there are no wires connecting the two devices: one device will automatically signal the other that it needs to connect.

Sweden's Ericsson is testing a device called EBOX to control home energy consumption other possible services are home remote monitoring of elderly or sick people who live alone and by remote control of home security systems.

New NET appliances which offer Internet access and e–mail may some day replace simple touch tone phones at home. Their advantage will be that unlike personal computers, screen phones will always be on and there will be no complicated software to install or learn.

People will begin to use their mobile phones for more than just chatting. The first phones able to display enough text to relay news and e–mail are starting to come off the assembly line. These new phones take advantage of wireless application protocol (WAP), a de facto global standard for providing information content to mobile terminals.The NOKIA 7110 can access text information from the Internet via display screen which allows viewing of different font sizes and graphics.The NOKIA 7110 supports inputs of 34 languages including Chinese from the phone keyboard. CNN has launches a wireless news service in conjunction with NOKIA 7110. Mobile phones can access the Internet and text services like the one from CNN offering news, market updates and currency rates. France Telecom is also about to launch content services via 7110.

Seemens has announced a new "Fingertip" technology integrated into mobile phones. Fingertip is designed to prevent unauthorized use of phones, computers or even cars.The rightful owner briefly taps a senor with his finger and the connected microchip knows whether to allow him access to the device, based on his in e-mail and fax and surf the individual fringerprint. Siemen's Personal Intelligent Communicator is packed into a pocket sized 3.4 cm. by 18.6 cm. box. The PIC can make phone calls, send and receive e–mail and fax and surf the Internet.

Mobile phone manufactures are now trying out new devices for the future. Thus, Motorola and France Telecom are testing a dual slot phone called STARTAC.D and Nokia is testing a special plug–in reader for a tiny smart card. On the other hand Ericsson's BLUE TOOTH will enable electronic devices to communicate over short distances so as to avoid adding a second smart card reader into the mobile handsets. In addition, Siemens "EINSTEIN" will have a smart card reader and keypad that could be linked to the phone via infrared wireless technology. They are also developing a dual slot phone.

England's PSION Series 5 Organizer offers Internet access and e–mail and fax capability via regular telephone lines.

PC and TV Connection

Philips Electronics new product AMBI incorporates share–wave technology which permits high speed wireless connection between the PC and TV so that a person can play a PC game on the TV in the family room while a second person uses a spreadsheet on the PC screen at home or office. Both applications reside on a single PC with digital wireless technology establishing a connection between PC and TV.

The say is not far off when TV will be used to do everything from ordering foof to buying stocks, to checking out new cars and booking a test–drive.

Such being the case we have to begin to change our thinking about the use of TV sets. Philips AMBI transmits PC software applications and Internet access to any TV set creating a second desktop for families with a single PC. Another Philips product INTERNET TV gives families without a computer their first access to the information superhighway.

Ways are being explored to provide ability to use the TV to surf at least some Web sites, send e–mail, participate in cat rooms, bank from home, order stocks in real time and access interactive advertisements which enable consumers to request specific information and other order products.

France's NETGEM includes an icon on the TV image which connects to a related Web page. With the set top box, a standard TV set and a regular telephone connection, users can e-mail, chat in real time and access customized electronic programme guides. NETGEM allows channel surfers to become Web surfers. To realize this a box is produced that sits on the top of the TV and turns it into a Web browser. The idea for this was that the best way to get mass market use of the Internet is the standard TV set and a simple telephone line to connect users to the Web. The NETBOX allows one to browse Web pages on the existing TV set using simple remote control.

Given such developments, TV could deliver some of the functionality of the Internet without the need for the type of money and skills required to access the Internet on PC. A further idea is to organize Web sites like TV channels to make searching simple.

Domestic Purposes Technology

More and more technology is going to be used for domestic purposes. Thus the PC in the office could be used to monitor the child and the baby sitter at home and even video-conference with parents. PCs could also be linked to any electronic device in the house. The charge for the mobile phone may come equipped with a picture frame that will house an ever changing display of online photos e–mailed by family and friends. Egg–like devices may act as monitoring systems so as to allow one to see what is going on at home. Dishwashers will e–mail their owners when their filters are clogged and repairmen will diagnose washing machine troubles online.

Sun Microsystems has devised software JINI to enable any type of electronic device to interact and connect to the Internet. New local area networking technologies are also emerging, such as wireless and power line connections, which allow consumers to link appliances without installing new wires. JINI–enabled devices will share data and instructions via the Internet, a cable or an infrared light beam without the need for PC.

Perhaps the most intriguing approach is the use of cables which deliver electricity to home and office for accessing Internet. While other access technologies require a complete revamping and rebuilding of infrastructure, domestic power lines can be used just as they are. The electricity distribution grid is the world's largest full–coverage cable infrastructure. All that is to be done is to add a base station in the network and a box at home.

Advent, Impact of Satellites

High–speed WEB access via satellite will be provided by services to boost e–commerce. It will be easier to purchase digitally downloadable products like music and software. Luxembourg's Europe Online Network plans to launch a mass market "Internet in the Sky" service aimed at 44 million European homes with cable TV and 27 million homes equipped with satellite dishes.

With the introduction of satellite services, satellite adapter cards will be available. These could be plugged into personal computers.

However, the fact remains that although data sent from satellite down to the user travels down at speeds of 500 kilobits to 2 megabits a second, it is not a two way channel because the user has to use terrestrial phone lines to send data back to the satellite. This limits the uplink seed to 56 kilobits per second modem. However the TELEDISC Corporation backed by Microsoft plans to launch a service on both the uplink and downlink avoiding the terrestrial phone networks entirely.

Nokia and Philips are manufacturing SET–TOP boxes which will allow consumers to access Internet over their TV sets via a new satellite service like Europe Online and it is expected that many consumers will buy these boxes than personal computers.

Satellites for Farming

A vehicle knows as the Salinity Assessment Vehicle (MSAV) has been built. It is a new farm vehicle not for speed but for seed. It is a sophisticated scientific instrument complete with a real–time link to global position system satellites (GPS). This vehicle enables farmers to map soil, plant crops and target pesticides more precisel and efficiently than ever before. The MSAV can detect salinity connectrations down to a depth of 1.8 meters with degrees of accuracy to about 20cm. It is leading to precision agriculture aimed to increase yields and reduce environmental impact.

Precision agriculture enables farmers to tailor their use of chemicals to the requirements of small patches of soil, sometimes even on the scale of individual plants. As a result, the use of agro–chemicals–and the ecological damage they case can be reduced.

In England the Silsoe Reserach institute in Bedfordshire is refining techniques of precision agriculture down to the level of single plants–plant scale husbandry. They have invented a small experimental vehicle outfitted with a video camera, a computer and an array of nozzles to spray chemicals. As this driverless, high–tech tractor makes its way across a field, the video camera feeds images of the terrain into a computer which analyses the data to separate the cultivated plants from the weeds. The computer then operates the nozzles to release precise doses of herbicide, pesticide and fertilizer as needed. Using this method cuts the amount of chemicals by 90%.

Advent of Virtual Reality

In 1984 virtual reality was synonymous with machines used by American military. The technologies were invented by Heilig, Sutherland and the scientists of NASA. However, it was Jaron Lanier who invented virtual reality: and artificial universe in three dimensions whose images are created by the computer. Jaron and his colleagues–Tom Zimmerman, Chuck Blanchard, Young Harvill, Steve Bryson–were the first to use the term 'virtual reality', which heretofore has been termed 'artificial reality' and developed the software which made possible the democratization of this technology.

The peculiarity of this virtual world is that the visitor or visitors can move in a dninteract with the objects, creatures that are there. This interaction actually takes place in real time and the computer instantly recalculates, in the light of the user's behaviour and gesture, the millions of new features which from the images of the virtual world.

The idea of a visual language for programming led to the making of virtual reality. This virtual reality will be very useful for architects to conveive buildings, help engineers in designing new products, surgeons to carry out operations and for artists to invent their own hypothetical galleries and museums.

Opportunities Offered by New Technologies

The opportunities offered by the new information technologies can be summarized as follows :

1. They enable developing countries to make technological leaps.

2. The digital revolution and technical progress entail the multiplication of information media and a continually growing supply of programmes.

3. Ordinary users, cultural and non–governmental organizations can take advantage of the opportunities offered by broader participation in the flow of information on networks. Moreover such opportunities would offset the excesses of government and abuses of power on the

one hand and offset ambitions of those desiring global or planetary expansion.

4. Technologies are bringing about changes in the world of work so that home workers have flexibility to work and avoid commuting.

5. Capital investment in research and development can receive a boost to acquire dissemination rights and to come up with innovations.

6. Internationalization of media has come about and will further expand (Star TV, CNN, MTV, etc.). Some have become very powerful. However their limitation is the standardization of programmes, language limitation and conflict with local cultures.

Bringing People Together

Many of the barriers that used to prevent people from communicating with each other have been eliminated through modern technology which has created cyberspace. People can now learn what they might have in common. The Internet defines the skeleton of cyberspace and is a network of networks of networks using data relating to its geographical diffusion, its expansion and evolution are mapped.

The great cyberspace software race has already begun *(Cortase,* 1996) and programmes have been developed that make it possible to move vast amounts of digital information, distribute it efficiently to correct addresses. This has created a kind of user interface that is bringing millions of ordinary people into cyberspace. Software has emerged that makes it possible for ordinary commerce and business people to make the Internet the all–purpose route into cyberspace.

Cyberspace to Cyberdemocracy

Cyberspace personified by Internet now provides us the opportunity to create a better world since large numbers of people can have access to and communicate with other people, share ideas and opinions and, consequently, influence decision making for mutual good. People can now say what they want to each other. And this is what is called democracy the core of which is interaction made possible by resorting to cyberspace, through Internet.

This capacity of connecting people everywhere, making them accessible to one another, is leading to the dawn of a new era which we can term as cyberdemocracy (*Ogden*, 1994). The gathering momentum of unfettered networking between governments, businesses and the common folk is the precursor of cyberdemocracy in which every one can access anyone anywhere for profit, for leisure or to benefit from the vast fund of knowledge that has suddenly become available. India has the potentiality of becoming the world's largest cyberdemocracy as governmental and private initiatives should be able to make available to ordinary people computers which will provide them access of information and knowledge and people within and outside the country.

As individuals become more and more aware of the benefits of participation in cyberspace they will in fact be using convergent technologies and use them intelligently and deliberately.

The great opportunity provided by cyberspace and participation in cyberdemocracy is that one could live anywhere but still continue to have opportunities of association or useful and fulfilling employment by telecommuting (*Ogden,* 1994).

Effect and Impact of New Technologies

The effects of the new information and communication technologies can be summed up as follows :

(a) They dematerialize the economy and wealth comes not from manufacture of material goods but from activities and services.

(b) The value of software and services surpasses that of machines.

(c) Software becomes the strategic raw material of the information society.

(d) The demand for 'information' of all kinds leads to expansion of information market–software, computers communication products.

Advent of Multi-media Revolution

The new and ever evolving information technologies are guiding the multi-media communications revolution and the evolution of information superhighways which inevitably will change the ways the people live, work, play, travel and communicate. What is more significant is that easy to use voice organizer technology is enabling individuals to recollect in their own voice their own thoughts and ideas as also to get reminded about events of personal or public import. Moreover, technology has evolved so that workers in companies can work in teams, sharing the same documents in offices around the world.

Macro and Micro Impact

Technology, like communication for development and social change, has no independent identity. It is closely related to the difficult task of safeguarding fundamental freedoms. Moreover, technology has to be mobiliszed to facilitate the transfer and exchange of knowledge, promote public participation, and create the climate for mutual understanding.

Apart fro such macro level impact of technology, its micro impact is also significant because it creates a crisis at individual level : human life becomes lonely with dialogue coming to and end and yielding place to a society of monologues and a civilization of soliloques. Such being the social and cultural impact of technologies it is necessary that one does not lose sight of the necessity of preserving oral tradition and social interaction at the family and community level to offset the effects of over exposure to secluded, or at best family viewing of media at home.

Possible Impact on Politics

The day will soon arrive when political parties will take recourse to new technologies. They will be weighing whether recruitment, training and deployment of vast cadres of the field workers alone will pay greater dividends or would it be more profitable to establish their own broadcasting and information collection and dissemination networks linked to Internet and thus be able to directly contact the people in their homes to deliver and discuss their programmes.

This task will undoubtedly be facilitated since the mass production of television sets will reduce their cost and individuals will consider it better one–time investment to own a set or two for continuous access to entertainment, information, and political options of their choice.

The large scale businesses and transactional corporations on the other hand will as well expand their capacities to avail of such technologies to market their consumer products right into the homes of prospective clients.

Call for Democratization of Communication

The unequal distribution of communication resources and technologies in the various parts of a country hampers development. Communication thus needs to be democratized to offset centralization that it usually results in. Democratization does not mean concentration of power of the few to reach the many, that is centralization, but the promotion of involvement and participation of the many in identification of problems and in the planning and programming to deal with them.

Problems Arising from New Technologies

Some of the problems which the proliferation of new technologgies are posing are in the following fields :

(a) Legal : Copyright of intellectual property.

(b) Cultural : Invasion of privacy, protection of data and confidential information.

(c) Political : Access to networks as a fundamental right.

(d) Inequalities : Between rich and poor countries; between countries of North and South.

(e) Standardzation of programme content which may result in reflection of foreign things and isolation.

As technology undoubtedly is influencing, and will increasing do so, the economic, social and cultural development the question that arises is as to what limits should technology be allowed to influence traditional culture and civilization which, in principle, should be determining the extent of technological inputs. Technology is the *sine qua* non for leap–frogging (*Sarabhai*, 1969) into the future for better socioeconomic welfare and for the purpose information will accelerate the transition from the public sector to market modern (*Thomas*, 1993). In reality, the effect of technology will shape the whole category of the future (*Druckery*, 1991). Already the technological boom has converted the traditional world into a cyber world.

Problem of Domination and Cyber War

One has to take congnizance of the fact that technological advances have reached such levels that today a government need not intrude physically into another territory to subjugate it because invasion through satellite and remote control mechanisms could as well serve the purpose. Thus the age of cyber wars has dawned and armies need not necessarily march across national frontiers since guided missiles, pilotless planes and laser guided armaments can destroy the targets of the 'enemy'. The need therefore is to develop strategies that would not allow such technological invasions of the country itself. Such a task is not easy because countries having latest cyber oriented technologies will turn a deaf ear to others interests and retain the upper hand in political wheeling dealing. And in waging a cyber war those using the technology will not lose soldiers but kill civilians and others in the country invaded.

The above leads to the question that developing countries need to pay attention to viz., whether the Western information saturated society should continue to dominate traditional, developing societies or whether the countries of the South, being sensitive to their own socio-cultural requirements, bring about their own communication revolution by pooling expertise and resources not for the purpose of confrontation but for self defense.

Creating Division in Society

The impact of modern technologies is creating the problem of integration of the elite of the developing countries with elites of developed countries (*Joshi Committee*, 1994). The communication technology haves are already linked and the have–nots will not remain far behind considering the pace of evolution. The day does not seem far off when the have–nots will be accessing, rather invading, the bastions of the haves who will certainly not like such intrusion.

In a country like India the fact has not to be lost sight of is that modern technology poses a challenge to the use of traditional culture based technologies. To meet this challenge a new type of manpower needs to be developed through suitable and innovative training programmes so that the implications of the impact of technology on culture and traditional modes of communication could be studied and strategies developed for dealing with them.

Cultural Invasion Beyond Sovereign Control

The far more serious problem that technology poses is the cultural invasion which is beyond sovereign control. Prima facie, cultural invasion from airwaves seems to be insurmountable but such intrusion can also build up resistance on the part of the people so that they begin to realize the value and importance of their own culture and voluntarily give up, or, at least limit their exposure to foreign cultural programmes. Research should be promoted to develop strategies for minimizing such intrusion.

The Y2K BUG or Possible Collapse of Services

That technology must reinvent itself to meet the challenge of producing greater well-being and satisfaction and allay the fears and anxieties of the people about the future and about the problems it can cause is amply demonstrated by the millennium bug or Y2K Bug as it has been called. One of the big worries among the Y2K anxious people has been about the collapse of public utilities and breakdown of everything because the millennium bug could lead to serious computer malfunction in the year 2000.

However, more careful calculation the millennium bug began some years ago because the basis of the calendars in use was figured out how far in the past was Christ's birth. Historians now place the Nativity no later than 4 B.C., the year King Herod died. By that reckoning, the third millennium would have commenced not later than 1997.

The Y2K problem lies in the fact that many of the world's comuters and microchip circuitry that run everything from cash machines and VCRs to interstate power grids and intercontinental ballistic missiles, contain a programming oversight that makes them incapable of reading the data 2000. To represent years, computers generally use just the last two digits. Thus when the year 1999, represented in computer language by 99, ends at midnight to 00 the computers that had not been repaired or corrected will conclude that date as 1900. This could lead to a surprising range of malfunctions, and not just in date–sensitive tasks such as billing and invoice systems. There could also be problems in anesthesia machines, intravenous pumps and intensive–care monitors which contain tiny computer chips. Therefore, according to some, it would be wiser to avoid surgery in the first half of the year 2000.

Many believe that the Y2K computer failure will result in mass panic, government paralysis, food riots, planes crashing into skyscrapper or in countryside. During 1999 the Millennium Bug has raised apocalyptic temperature and has carried the millennial fever across national and religious borders.

The Y2K Bug is something akin to the original sin of our technological society, a flaw bred in the very bones of the modern world. However, though most of the dire predictions connected with the year 2000 computer bug are unlikely to come true, a little computer–generated chaos would provide a fitting conclusion to a 40–year old story of human frailties: greed, shortsightedness and a tendency to rush into new technologies before thinking them through.

Twelve Technology Tenets

1. Technological level determines the level of economic, social and political status of communities and nations.

2. Technology breeds more technology.

3. Technology trespasses national boundaries and brings people together across frontiers.

4. Technology enhances access to political power at local, national and international levels.

5. Technology saves human resources but increased monetary spending.

6. Technology tends to be a substitute for soldiers in warfare.

7. Technology eidens the generation gap, trespasses existing social norms.

8. Technology guides decision making at local, national and international levels.

10. Technology facilitates international interaction and understanding.

11. Technology facilitates and enhances flow of information and effectiveness of communication media.

12. Technology creates problems and also finds solutions thereto.

4

DEVELOPMENT COMMUNICATION

Communication is the nerous system of contemporary society. It is an essential resource for contributing to and facilitating social change by increasing an understanding of the effects of such change on life in society, its economy and its culture. Programmes for socioeonomic development aim at changing and improving the quality of life of the people, and as the quality of life ameliorates the people's expectations rise and call for still more action for positive change.

Development Communcation Process

Communication for socioeconomic development and change can be summed up as a process whereby information leads to action and to change as envisaged by the policies and programmes designed for implementation thereof. It is multi-disciplinary and multi-sectoral.

For its conceptualization and implementation and for achieving the goals of policies and programmes, development communication needs inputs from and assistance of many collaborators since no one profession or discipline can by itself deal with its varied aspects.

Thus :

(a) Social scientists, anthropologists, social psychologists are needed to undertake research into the knowledge, attitudes, beliefs, and behaviour patterns of the people and for identification of the gaps or the problems that communication should address itself.

(b) Outreach workers (communicators, educators, extension workers) are needed to take the research into consideration while working with media and at the community level.

(c) Mass media specialists are needed to disseminate the information based upon the researches, to create greater awareness amongst the people and to reinforce the work of the communicators and educators at the community level, who, in turn, provide feed back to the mass media as to the community reactions and information needs. This feed back from the peoples own abodes to the policy makes and decision takers is invaluable in bringing about necessary changes.

Communication is part and parcel of the process of development and its most crucial role is that of being development supportive. Its vital role is to inform, educate and motivate the people in achieving the goals of planned development.

Communication : Part of Development Plan

In view of such a vital role communication should be considered not only as supportive of development but as an integral part of the development plan itself and provided necessary resources for its planned development.

Communication in its broadest sense is a defined sector of economic activity in which a large number of enterprises operate at various levels, employ various commercial methods, offer different types of goods and services and comprise a series of production and distribution functions. The economic importance of communication activities constitutes a quite highly differentiated economic sector.

The economic aspect of communication requires careful analysis both in itself and in its implications as regards dependence, national sovereignty and the international concentration of power.

However, it has to be realized that development cannot be reduced to economic growth but it is rather a human centered process aiming at satisfying needs, both material and non–material, through self–reliance, endogeny, harmony with the environment, and structural transformation.

It is a common observation that development is restarted as soon as communication or information stagnates, and, inversely, any change in the structure of communication/information leads to development of societies. This fusion of communication with society highlights the political dimension of the problem and the effect which it has on development.

Communication is thus being increasingly seen as an underlying cause of general under development of individuals and nations. On the other hand, the under development of both national and international communication may be seen to be an underlying cause of general under development. And, because communication is a fundamental social process underlying any social change that a developing country wants to make, and is necessarily a part of any plans to improve human life in any culture, the development of communication sector becomes imperative. This is also because communication support smoothens and facilitates the pace of socioeonomic development.

Communication in support of development programmes requires an understanding of the attitudes of the people, the society, traditions, and, of course, of the media and the community organizations and groups. The knowledge of the society, and of the attitudes and behaviour patterns is provided by research. The knowledge of the media and community organizations is acquired through training. The change process is initiated through use of media and community channels. The impact of the communication process is measured through evaluation.

Characteristics of Development Communication

Planned, Conscious Errort

Communication for development and social change is a planned and conscious effort. It is undertake neither to make people realize, become conscious, aware of the fact that a certain social or development problem exists or, where people are aware and conscious but remain passive about these, to activate their interest in resolution thereof.

Subtle and Persuasive

Besides being conscious and planned communication for development and social change is subtle and persuasive and through the process of community participation helps individuals to modify their behaviour. Moreover, it is linked to the provision of services and facilities by availing which individuals could change their behaviour. its action is thus four-pronged :

(i) towards the community and the individual,

(ii) the services and facilities,

(iii) achievement of material goals, and

(iv) behavioural change.

In sum, such communication is not an end in itself but for realization of an objective or objectives and for effecting changes in knowledge, attitudes, beliefs and behaviour patterns of the people.

Different from Communication Technology

Communication for socioeconomic development has a different connotation than communication technology *per se*. The former is for achievement of social objectives, the latter being an accessory to the former. In fact it is the interaction at the community level–community organization and group and interpersonal communication coupled with mass media use–that constitutes the basic element of development communication.

Facilitates Involvement, Participation

Communication facilitates change of the existing situation for the better, not for the worse. To bring about such change communication ensures the involvement and participation of the people in the diagnosis of the problems and in the planning and implementation of action to solve them.

Communication ensures involvement and participation through a process of identification of :

(i) the levels of knowledge, beliefs, and behaviour patterns of the people,

(ii) the gaps in the knowledge and the socio–cultural factors hat inhibit their involvement and participation, and

(iii) content of the messages or information to be imparted through a three–fold strategy of using mass media, community level channels of *communication* and group and community organization work.

For ensuring the involvement and participation of the the people, social institutions like the modern mass media, community level channels of communication, folk and traditional media, and community organizations and groups and inter-personal communication come into play.

These modem and traditional media and community organizations and groups can be mobilized to provide individuals the social support, reinforcement and legitimization of the desired action for resolving problems and situations.

Key to implementation of Policies, Programmes

Communication today is the key element in the development and implementation of policies and programmes aimed at the well-being and welfare of the people everywhere. It involves people, who are the ultimate beneficiaries in the implementation thereof. Thus the emphasis is on community welfare and well-being as also on the individual and the family which play a decisive role in the new ways of life acceptance and adoption of new ways of life.

Communication's role is particularly important in relation to such social changes as socioeconomic, environmental and urbanization or processes of integration and exclusion associated with modernization of societies.

Helps Make Choices

Today development planning has become an exercise in managing resources and their distribution amongst various sections of society so as to reach the maximum number possible. Millions and millions of individuals have thus to be reached and their decisions and choices taken into consideration.

Development communication is about these choices. It helps people to examine issues on the basis of knowledge and information. It enables them to be involved in and to participate in the planning and implementation of development policies and programmes aiming to bring about change in their own life and that of their society.

Support for Human Rights

The challenge that communication has to meet is in societies in developing countries where three–quarters of the world population lives. These societies are not in a position to meet the basic needs of their populations living below the absolute poverty line. Development, as communication in support thereof, have to be conceived as a matter of human rights. Development communication should ensure this right through maximizing the involvement and participation of the people at the grass–roots level in the identification, planning and implementation of development programmes. In this respect development communication takes the individual as the focus as also the aim of development.

Components of Development Communication

Information, education and communication used in an integrated fashion are essential ingredients for promoting awareness and understanding of development issues.

Information

Information includes the technical and statistical information that is used to create awareness of issues among governments, non–governmental organization and communities. Information activities whether in the sense of dissemination of technical information, public information or awareness creation, bring facts and issues to the attention of the audience. The primary aim is to provide material to stimulate discussions.

Education

Education draws upon communication because educators must communicate with learners if they have to be effective teachers. Education usually exposes and individual or an audience to learning over a longer period of time than does communication or information activity. The aim of education is to foster genuine understanding of problems and possible solutions. For example, education helps people understand the nature, causes and implications of development process as they effect, and are effected, by groups or individuals. Education may take place either in the formal school system or in the wide range of non–formal educational programme activities.

Communication

Communication contributes to enhanced knowledge about development issues, to changing attitudes, to bringing about a voluntary change in behaviour or all these together. It is always a two–way process with information flowing back and forth between the audience and the communication agents. In brief, it entails an exchange of ideas and information and aims at fostering interest, creating demand and otherwise supporting programme activities along with and including efforts to increase awareness of issues among policy makers. Communication is to motivate the sudience to action. The learning needs and perceptions of the target audience are studied with that end in view. It seeks the participation, especially in early research and planning, so that the ultimate programme reflects te values of the target audience.

Communication in support of socioeconomic development policies and programmes requires the integrated deployment and use of mass media and folk media, interpersonal channels and social marketing techniques. The purpose for which communication methods and techniques are employed are : .

(i) to identify problems among target audiences through application of research techniques as focus group discussions (8 to 10 persons);

(ii) to solve problems using a mix of media and other techniques to facilitate understanding of development issues, leading to discussion and problem solving;

(iii) to disseminate knowledge of innovative concepts;

(iv) to bridge the gap between professional knowledge and audience understanding of development issues;

(v) to motivate selected segments of the public, including policy makers, change agents and other target audiences;

(vi) to bring about a desired, voluntary change in behaviour, i.e. the adoption of desired practices and services;

(vii) to change traditional attitdes;

(viii) to encourage healthy dialogue among people;

(ix) to disseminate concepts to target groups responsible for programme implementation;

(x) to improve management;

(xi) to motivate change agents, administrators, and managers;

(xii) to support training activities; and

(xiii) to improve programme design and management.

Challenges to Development Communication

Those engaged in the planning and implementation of development communication have to face many challenges. These can be briefly stated as follows :

Behavioural Change

Problems involved in bringing about changes in the knowledge, attitudes and behaviour of the people in the absence of inadequate research findings and paucity of trained personnel.

Management of Complex Activities

Problems of management of complex activities involving the participation of diverse mass media on the one hand and various government ministries, voluntary organisations, community groups, professional and informal groups, and interpersonal relations on the other.

Utilization of New Technologies

Problem of training for and utilization of new technologies, like satellite communication and traditional/folk media, use of computers and access to Internet.

Availability of Trained Personnel

Problem of ensuring a continuous supply of trained communicators and outreach workers and ensuring their access over a long duration to cover rural audiences in particular in the light of paucity of resources.

Matters of Concern in Development Communication

Some of the concern which need to be addressed in development communication work are :

(a) communication concerns *per se* ;

(b) technical and organizational concerns; and

(c) programming concerns.

Communication Concerns

One of the basic development communication concerns is its multi–disciplinary and multi–sectoral nature. Mass media, community groups and individuals have to be involved. Since no single organization or ministry deals with all these, coordination becomes a problem.

Yet another concern is the effort involved and resource availability for arriving at a common understanding of the priority issues and problems (though interaction at the community level), provision of information, and understanding of the relationship between development factors and individual welfare. Preparing communicators with such perception and understanding calls for a reorientation of communication training programmes.

In developing communication strategies the easier work is that of having a national orientation but the bardest work, and matter of concern, is at the local levels. The same content or the same methodology developed at the national level may not be relevant at the other levels of states or provinces, districts, talukas, villages since their problem priority ratings may be different.

Thus, communication, has to be designed for each level so as to be relevant. This is a challenging task and needs to be paid greater attention.

Moreover, the national financial resources often being limited, recourse has to be taken to international or bilateral assistance. The sources of such assistance being few and with their own criteria for funding, development communication programmes' planning tends to follow such criteria and requirements. At the national level the solution to this concern can be tackled by its institutionalization and integration of development communication in the sectoral programmes and in teaching and training institutes.

A further concern, as in communication in general, is that of feed–back. The vigour and vitality of a development communication programme lies in its capacity for providing feed–back from the community to assess the impact of activities not so much in terms of changes in attitudes and knowledge of the people but in terms of their access to and acceptance of the services and facilities provided.

And, lastly, a concern is that while so much is expected of communicators and communication programmes, they have little or no technical backstopping or orientation about new developments. What is serious, however, is that the communication personnel are hardly involved in the policy and planning phases but are expected to be the standard bearers only.

Technical and Organizational Concerns

It is evident from the above that for development communication efforts to be effective what is needed are supportive technical backstopping and organizational support.

This calls for a strong inter–sectoral coordinating mechanism so that each sectoral programme endeavours for developing integrated developmental messages supportive and complementary to one another rather than contradictory ones.

Though the need for a research base is widely recognised fewer inputs and poor research utilization are a generalized concern in development communication work. Moreover, the development communication programmes' reporting is so oriented as to describe achievements in terms of number of activities or media programmes produced and the money spent thereon rather than the achievements in terms of the overall programme objectives.

Yet another of the concerns is that while policy makers ask for proofs of the effect of communication work on achievement of objectives, there is a striking lack of technical assistance and facilities for evaluating such impact in concrete, quantitative and qualitative terms.

The key to the success of development communication strategies is field work. However, this important aspect is often entrusted to workers who are low paid, less qualified, without required facilities for reaching out in the countryside. The concern is further compounded by the absence of appropriate material support and technical and programme information flow towards them.

In a country like India marked by diversity of religious, political and linguistic factors, development communication has to contend with the views of minority groups. To work with such communities and to develop approaches and messages of a secular nature is no child's play and requires, on the part of communicators, great awareness of current issues and capacity for empathy with the target audiences.

Moreover, since development policies and programmes have a bearing upon representation of the people in the country's decision making bodies and on allocation of national resources for local development, communicators have to tread carefully without offending political, religious, linguist and local and regional sensibilities and sentiments.

However, coordinated communication for integrated rural development may be desirable, it is easier said than done. The main reason for this is that more often decisions and policies tend to flow from the top of the administration to the grassroots level rather than be built upon local needs and requirements identified by the people.

To attempt integration of policies and programmes and their communication support at the central, state or provincial and local levels is a stupendous task because of division of development ministries according to the political influences and the competition between the ministries concerned to guard their own sectors.

The way out is to attempt integration at the field level where the functionaries of the sectoral development agencies interact with one another. Moreover, the target audience for each sectoral field representative tends to be the same and they interact more with the communities than the functionaries of the diverse ministries at the upper levels of administration.

Mechanisms thus need to be developed at the field level to encourage the communicators and outreach workers of development ministries and agencies to meet together to develop common approaches and messages. To make this possible a mechanism at different levels should be developed to feed latest technical, policy and programme infomation to all outreach workers and communicators.

Programming Concerns

Technical and financial assistance is needed in the following areas of development communication :

(a) Communication planning.

(b) Setting up of central, state and district development communication units.

(c) Communication equipment and transport facilities.

(d) Training of trainers and of key communication personnel and opinion leaders.

(e) Training in development and production of mass media programmes and of folk/traditional media utilization.

(f) Production of motivational materials and resource books for outreach workers.

In order that development communication work could be more effective in achieving development objectives, the involvement and participation of the people in the rural areas and of women and youth nationally needs to be encouraged apart form collaboration with non–governmental organizations representative of the people.

In programming more and more emhasis needs to be laid on research and evaluation, strategy development, management of multi–sectorial and multi–disciplinary communication programmes, development of systems for backstopping the work of the extension workers and the institutionalization of communication training for development for meeting the long term needs of communicators.

The final programming concern is the lack of relationship between a communication activities per se and the development programme objectives in terms either of acceptance rates or changes in the knowledge and attitudes of the target audiences.

The foregoing concerns in development communication can be kept in view while planning development programmes in collaboration with the communicators at various levels. Only when these concerns are adequately addressed could development goals be well and satisfactorily achieved.

5

INTERCULTURAL COMMUNICATION

The explosion of information and knowledge that we are witnessing today has been brought about by the stupendous advances made in the field of communication. The advent of the information superhighways marked by the Internet, the growing proliferation of satellite systems and digitalization on the one hand and, on the other, of means of transport in bringing people of different nations speaking different languages, having different religious and beliefs systems and viewing and perceiving the world in their own frame of reference–all these highlight as never before the need for promoting understanding and mutual appreciation amongst different people.

Only by consolidating and understanding the positive and common aspects of diverse cultures can interpersonal and international understanding come about. And it is intercultural communication that can facilitate it.

Understanding Culture

An understanding of the meaning of culture is essential before engaging in a discussion of intercultural communication.

Culture, whether it concerns a group or an individual, consists of a set of rules of conduct, cognitive orientations and criteria of evaluation *(Bourricaud)*. It is more than communication, it is more than creation, it is more than education; it is the ability of people to master the necessity of change and development without feelings of frustration or alienation. However, what is common to language and culture is the fact that they are both means of communication.

Culture should be regarded as becoming aware, sometimes spontaneous, sometimes methodical, through which vague, confused meanings are consolidated and elucidated.

Culture is the man–made part of environment. It consists of habits and tendencies to act in a certain way, not the action itself. It is impossible to separate the individual from the environment in which he functions. To be truly part of a culture, one must grow up in it. And growing up involves meeting a multitude of challenges. The full impact of the process does not come home till one has cut the apron strings and established oneself as independent of one's parents.

Culture is the crucible from which values emerge, when preferences are formed and the hierarchy among them is established. It is a never ceasing activity demanding the collaboration of all generations and crystallising itself in anaxiological table which governs the entire life of the society *(Beseat).*

Culture can be said to be the entire range of artistic, literary and philosophical outputs and creations which duplicate the everyday life of a society by adding to it a symbolical aessthetic outlay. However, culture can be said to represent the knowledge and practices, both intellectual and material of society *(Ziolkowski).*

Importance of Cultural Factors

One of the functions of culture is to provide a highly selective screen between man and the outside world. In its many forms, culture therefore designates what we pay attention to and what we ignore.

Cultural differences in turn can be based on religion, language and region. There is no direct relationship between the degree of these differences and the extent to which people are aware of them *(Beteile).* In India the same individual has a number of identities according to caste, religion, and language and any one of these might become more important than the others, depending upon the context and situation. People might be highly conscious of their differences, whether physical or cultural, without their consciousness acquiring a political form.

In a sense all forms of development ultimately are determined by cultural factors. Indeed from this point of view it is meaningless to talk of the relation between culture and development as if they were two separate concepts, since development and the economy are part of, or an aspect of a people's culture. Culture then is not a means to material progress; it is the end aim of development seen as the flourishing of human existence in all its forms and as a whole *(Unesco)*.

However, culture also brings with it tensions arising from population density and spatial proximity which have effects on social organisation, participation, creativity, poverty and the relationship to nature.

People are not self–contained atoms; they work together, cooperate, compete and in many ways. It is culture that connects them with one another and makes the development of the individual possible. Similarly, it is culture that defines how people relate to nature and their physical environment. Unlike the physical environment, where we dare not improve on the best that nature provides, culture is the fountain of our progress and creativity *(Unesco)*.

A country's culture therefore reflects its history, mores, institutions and attitudes, social movements, conflicts and struggles, and the configurations of political power internally and in the world at large. At the same time it is dynamic and continually evolving.

Culture is man's medium and there is not one aspect of human life that is not touched and altered by it. This means personality, how people express themselves (including dhows of emotions), the way they think, how they move, how problems are solved, how their cities are planned and laid out, how transportation systems function and are organised, as well as how economic and government systems are put together and function.

Cultural Identity

What gives man his identity no matter where he is born is his culture, the total communication framework: words, actions, postures, gestrues, tones of voice, facial expressions, they way he handles time, space, and materials and the way he works, plays, makes love and defends himself.

Culture is whatever people have to know, to be cooperative and acceptable in society. It does not consist of things : people, behaviour, or emotions. It is rather an organisation of these things. It is the forms or things that people have in mind, their models of perceiving, relating and otherwise interpreting them.

The only thing one might term cultural is man's response to his innate drives. Thus eating is biological, but how one satisfies hunger is cultural. Sex is biological, but with whom and how it is permitted is cultural.

Save in degree cultural barriers are similar to biological barriers and foreshadow them the more accurately in that all cultures make their mark on the body itself.

Culture, in fact is defined in terms of these very differences. People tend to think their cultural traits are human mature but it has to be realised that we tend to influence others in our own distinctly cultural way. We are always unconsciously and consciously cultural communicators *(Bourricaud).*

From birth the people and things surroundings us build up in each of us complex, systematic frame of reference for conduct, motivation and implicit value judgements which our education, with its introspective view of the historical evolution of our civilization, subsequently confirms. We literally carry this reference system around with us and we can only see the cultural structures established outside it in the distorted form it has given them., It may even prevent us from perceiving them at all.

It is the form of culture men adopt, in one place or another, in their past or present way of life, which to a great extent determines the pace and direction of their biological evolution. Far from asking whether culture is a function of race, we discover that race–or what is generally ;understood by the term–is one of the functions of culture.

Culture determines the boundaries of the geographical reach chosen by a group or imposed upon it, the relations it maintains with neighbouring peoples, whether friendly or hostile, and, consequently, the relative scale of genetic exchange with them.

Humans are tied to each other by hierarchies of rhythms that are culture–specific and expressed through language and body movement.

Cultural Transmission

Culture transcends time and space, but it is also affected by variations of time and space.

A major aspect of cultural transmittal includes the traditions, language, attitudes, beliefs, values, non–verbal patterns, and thought orientations passed down from generation. A culture consists of a multiplicity of traits Levi–Strauss of which some are shared in varying degrees with other cultures, whether neighbouring or distant. These traits find equilibrium within a system which must be viable; if not, it will find itself gradually eliminated by other systems better equipped to propagate or reproduce themselves.

In India the same individual has a number of identities according to caste, religion, and language and any one of these might become more important than the others, depending upon the context and situation. However, peole might be highly consious of their differences, be they physical or cultural, without their consciousness acquiring a political form.

Ethics and Rights

The real basis of global ethics is a common morality and respect for human rights. Developed countries expect adherence to this principle only from poor countries. However, these developed, rich nations also need to set an example, particularly by respecting the rights of their own minorities and immigrant populations.

A culture refers to the distinctive way of life of a group of people, their designs for living *(Maletzke)*. The more that persons have in common with others, the less likely they are to suffer serious breakdowns in communication or cultural distortion. Two individuals who are culturally diverse on one topic or at one time, may be culturally homogeneous under different circumstances. There is in recognition of the redefinition of culture as encompassing language, thought, innovation, creativity and critical skills, as well as the arts.

Even though massive breaches of human rights have often been motivated by cultural considerations, culturally persecuted individuals and groups have not found adequate recourse in the existing framework of human rights protection.

Culture is broadly understood as a system of shared symbols and values–a structure of messages through which human beings shape their existence. Cultural systems are not static, frozen in time, but a dynamic process ideally speaking, draw on other systems and in turn influence them *Kothari*.

Cultural Freedom

No culture is an island or hermetically sealed entity. All cultures are influenced by and in turn influence other cultures. Nor is any culture changeless, invariant or static. All cultures are in a state of constant flux, driven by both internal and external forces. Moreover, cultural freedom is a cherished goal of all groups and is rather special.

Cultural freedom is rather special; it is not quite like other forms of freedom *(Unesco)*.

First, most freedoms refer to the individual freedom to speak one's mind, to go where one wishes, to worship one's gods, to write what one likes. Cultural freedom in contrast is a collective freedom. It refers to the right of a group of people to follow or adopt a way of life of their choice. Cultural freedom properly interpreted is the condition for individuals to flourish.

Second, cultural freedom properly interpreted is a guarantee of freedom as a whole. It protects not only the collectivity but also the rights of every individual within it. Individual rights can exist independently of collective rights, but for existence of collective rights, cultural freedom provides additional protection for individual freedom.

Third, cultural freedom, by protecting alternative ways of living encourages creativity, experimentation and diversity, the very essentials of human development. Indeed, it is the diversity of multicultural societies, and the creativity to which diversity gives rise, that makes such societies innovative, dynamic and enduring.

Finally, freedom is central to culture and in particular te freedom to decide what we have reason to value, and what lives we have reason to seed. One of the most basic needs is to be left free to define our own basic needs. This need is being threatened by a combination of global pressures, globalization due to cyber growth and also by global neglect.

Cultural Diversity

A nation is a multiculturally constituted civil state based on citizenship rather than on bonds of blood or culture. This cultural diversity includes a multiplicity of interaction and cultural borders including race, ethnicity, colour, gender, class, age, physical ability, regions, location, language, faith, creed, sexual preference and so on.

Respect for all cultures within a country, as also internationally, implies a positive attitude to other people and rejoicing at their different ways of life, at their creative diversity. There is an underlying unity in the diversity of cultures.

Before culture was just lived but now it has become a self–conscious project and every struggle for life has become the struggle for a way of life. Thus arise ethnic conflicts and inter–group disputes over competing interests and threatened identities in which the groups themselves or their members engage in hostile and aggressive actions towards each other. But these ethnic animosities for not necessarily arise from ancient hatreds but are periodically revived rather often result from contemporary self–interested actions by opportunistic political entrepreneurs seeking external legitimacy and popular support.

In the pluralistic and multicultural societies, a requirement for the easing of internal social and cultural conflicts is an expanding economic base that provides for increasing employment and better living standards.

The most durable way to accommodate ethnic diversity is to create a sense of the nation as a civic community, rooted in values that can be shared by all ethnic components of the national society. Such a sense of community is freed from connotations of ethnic exclusivity. In such cases, certain priorities should be established. *(Hall)*

First, members belonging to the minorities must enjoy the same basic rights and freedoms, and the same constitutional safeguards granted to all citizens.

Second, whatever form of government, the human rights of all members of the majorities and minorities must be guaranteed. Human rights take precedence over any claims to cultural integrity advanced by communities.

Third, tolerance and cultural conviviality should be promoted, encouraging cultrural diversity *(Weather)*.

Global cultural diversity is a historical and social reality. The cultural diversity of different nations is a rich inheritance of humanity and will endure as the central pillar for peace, harmony and cultural sustainability of the world. The promotion of this global inheritance through the process of cultural pluralism is the responsibility of all societies.

Ethnicity

Ethnicity is a social identity linking people through an ideology of kinship and common ancestry which usually involves innate traits.

Ethnicity is situational, changeable and often results from cultural, social and political constructions.

The culture of a nation or a larger cultural area is a collection of subcultures. Its acquisition of a mass character in fact amounts, if not to a disappearance, at least to awakening of the subcultural features with a concurrent increase in the importance of the features common to all the members of the society. *(Malitza).*

A country need not contain only one culture. Many countries, perhaps most including India, are multicultural, multi–national, multi–ethnic, and contain a multiplicity of languages, religions, and ways of living. India is an example of a multi–cultural country and can reap great benefits from its pluralism besides running the risk of cultural conflicts. It is here that government policy is important. Governments cannot determine a people's culture : indeed these are partly determined by it. But they can influence for better or worse and in so doing affect the path of development *(Unesco).*

Conflicts between ethnic groups take place because of the ignorance of the fact that the great gift that the members of the human race have for each other is the opportunity to achieve awareness of the structure of their own system, which can be accomplished only by interacting with others who so not share that system.

Ethnic diversity can be a source of great strength and an invaluable passed, provided people can develop the desire to learn from each other which is one of the principal ways of learning about oneself *(Tambiah)*.

It is an undeniable fact that in many countries national and ethnic symbols are ceasing to be the main references of social identity and cohesion. The time has therefore come to rethink ways of establishing equitable and creative ties between the homogeneous transnationlization of styles of information and entertainment and the aspiration of local and national cultures to survive. The problem is to understand how the distinctive identities of each people are being reorganized in international processes of segmentation and intercultural hybridization *Unesco.*

The more that our patterns of language, non–verbal cues, attitudes, beliefs, stereotypes, prejudices, values, and thought orientations differ, the more likely that we are to engage in serious cultural distortions.

Social isolation makes individuals and societies more vulnerable to social problems like ethnic conflict and socially isolated individuals and societies with weak social networks are most at risk. Moreover, traditional cultures, because of their fragility and in the absence of powerful socio–enonomic supports, are particularly vulnerable to the eroding action of modern technological civilization *Ross.*

Culture and Development

Culture in the humanistic terms is the process of human development, and more particularly the cultivation of the mind. It needs to be distinguished from culture in its anthropological senses, notably culture as the total and distinctive way of life of a people or society.

Culture is the end and of development which should be understood as the flourishing of human existence in its several forms and as a whole.

Development and economy are part of a people's culture and since development divorced from the cultural context is growth without soul, the question that arises is as to what policies to promote sustainable human development that encourages the flowering of different cultures.

Culture's role is not to be the servant of ends but to provide the social basis of the ends themselves; it is the ends and aim of development when the latter is seen as the flourishing of human existence in all forms and as a whole.

Although economic growth is a basic factor of development, the real yardstick is the extent to which it satisfied the socio-cultural aspirations of individuals and communities.

If culture brings self-awareness and determines the individual's choices and actions, it also fulfills his aspirations to dignity. Only if the various peoples, rooted in their cultural values can they acquire the confidence and motivations necessary for the innovations demanded by development. Similarly it is the assertion of cultural identity which underlines the will to establish a new international economic order, under which respect for the values peculiar to the various civilizations would make it possible to establish international cooperation on a basis of mutual respect, justice and solidarity *(Malitza).*

Just as the state of political independence prepared the way for economic independence, so both of them cooperate in a stage of development in which culture, which has been subjected to constraints of dependence on the outside world, can manifest itself to the full, consolidating self–awareness, a determination to penetrate into history, the thirst for achievement and the hope of progress.

Actually culture is the last frontier of development.

The problem in fact is about the interrelationships between the technological and socio–cultural change within the framework of overall development, or more specifically, about the interdependence between mass communication and mass culture.

Development is changing the cultural perception of women's and men's life cycle as well as the patterns of gender relations. On equality grounds women can no longer be distanced from the mainstream of development since they play a highly significant role in cultural transmission and maintenance.

Communicative Behaviour

Communicative behaviour is usually observed in four different settings characterized by differences in magnitude of the system :

(a) The interpersonal or intrapsychic communication system– thinking, feeling.

(b) The interpersonal system–communication between two persons.

(c) The group system where several persons known to one another interact.

(d) The social system which includes so many persons that individuals can be considered statistically, the individual's identity is lost and communication is considered an interaction of groups or large bodies of person *(Ruuesch et.al.)*

While communicating with each other, people not only exchange messages containing information that refers to outside events, but they also exchange messages referring to the communication process itself. These meta communication messages include *Ruuesch et. al.*

(a) The specific instructions given by sender about the way messages ought to be interpreted.

(b) Implicit instructions contained in what is commonly referred to as role.

(c) Institutional instructions, either explicit or implicit, that are inherent in the structure of social situations and the rules governing the flow of messages.

Language and Paralingualism

Language is one of the many forms of human communication. It is basically a matter of talking and listening. Language is a form of behaviour, of actions such as speaking and of reactions such as understanding what was said. For people to communicate with one another they must not only have a common set of signs but also a common set of relations *(Smith)*.

In "Our Creative Diversity", the report of the World Commission on Culture and Development *(UNESCO)*, stress has been laid on the need to encourage individual and group creativity, promotion of collective forms of artistic creativity, recourse to the arts for social communication and community building, encouragement for development of a media environment that enhances human development by adopting the principles of competition, diversity, minimum moral standards and a balance of efficiency either equity. Promotion of community media services has also been emphasised as also promotion of cultural industries and new media techniques to reflect and reinforce cultural diversity. The report lays stress on standards in the electronic media which reflect the values of the community while respecting freedom of expression.

Communication does not consist merely of conversation. We speak to each other, but also speak about something which is not us and which possibly is opposed to us as an obstacle or resistance.

Not every communication is linguistic in form. There is a paralinguistic form of communication which in most cases constitutes the content in which linguistic communication takes place. The speaker emphasises or modifies the meaning of his remarks through gestures such as a movement of the arm or hand or a shaking of the head. But it sometimes happens that gestures do not form the context of the communication but are communication itself. A gesture is a part of the body or a product of the bodily activity which one reveals or conceals; it is a posture imprinted on the body. Gestures also reveal a certain degree of universality. They convey information about those who perform them and to those for whose benefit they are performed some gestures can be understood only by the sender and the receiver. Thus tears may signify joy for one, sorrow for another *(Bourricaud).*

If we compare cultural phenomenon with communication processes, we find that there is some overlapping between cultures and societies, which gives validity to cultural symbols outside the social groupings where they were formed. Not only is there a possibility of communication between men by means of language but there are also non–linguistic and paralinguistic possibilities. The content and reliability of these various systems of communication vary greatly in kind an value. But a strictly human experience of communication exists which guarantees at least potentially, a bond of minimal understanding between men.

Human interaction is much more related to nonverbal systems of codification. Although most people are familiar with the rules that govern verbal communication–logic, syntax, grammar–few are aware of the principles that apply to nonverbal communication. Gestures are usually employed along with speech. They are used to illustrate, to emphasis, to point out, to explain or to interrupt. Accordingly they cannot be isolated from the verbal components of speech. The understanding of most spoken messages is dependent upon the observation of both verbal and nonverbal codifications, and any isolation or oratorical or conversational gesture is out of question *(Ruuesch et. al.)*

Non-verbal communication must always be read in context as it is a part of the context in which the verbal part of the message is set. The meaning of a communication is always dependent upon the context. Nonverbal systems are interwoven within the fabric of the personality and into the society itself, even rooted in how one experiences oneself as a man or a woman. Actually nonverbal systems are closely tied to ethnicity–in fact they are the essence of ethnicity *(Ruuesch et. al.)*

Complex Effects

Within a given culture communication has many complex effects. Thus when communication takes place between two cultures, these effects are even more complex. When messages are transported across national boundaries (*Smith)* and since there are differences in the orientation and social organisation between cultures, communication between their members is affected by the stereotypes and images retained by each culture. Accordingly, the possibility of misunderstanding and of unexpected reactions increases and intercultural communication becomes a problem of communication among varying states of consciousness.

Because of the differences in orientation and social organisation the messages from one to the other do into take a form of neutral, aseptic form. It affects the sender and the receiver and can alter relations radically. It can also create unexpected results, either immediately, or in the long run, either in the cultures concerned or in distant, utterly different cultures. In fact, the way in which people interact reveals a great deal about their cultural identity. People communicate with the hope of fulfilling their cultural expectations. The degree of cultural difference between interacting persons, assuming they are from different cultures, determined the type of communication : intra–cultural, inter-ethenic, inter–racial, or intercultural.

The influence of culture on the communicative interaction is an intricate one. Intercultural communication has emerged as a response to the continuing drama of Western orientations in social science. Intercultural communication attempts to shed the trappings of ethnocentrism and explain the communicative at in its own terms.

The Process

Intercultural communication is the process of exchange of thoughts and meaning between people of different cultures which despite many inner diversities, nevertheless reveal a substantial ;unity in basic beliefs and forms of experience–in customs, norms and behavioural characteristics *(Maletzke.)* This process comprises of two phases: First the experience of learning from the other society and its institutions. Second, the application of this learning.

Intercultural communication comes about between communication partners who share several things in common, e.g. a similar level of education, common interests, a common profession, similar motivations, etc. Because of this there develops right across the vertical barriers a kind of horizontal field of communication *(Maletzke).*

Intercultural communication takes place in almost every sector of human activity, viz., politics, science, art and culture, economics, journalism, tourism, technics, church and charity affairs, sports, military sector, institutions and organisations and personal, private sector.

Psychological Background

The psychological background of intercultural communication indicates what it really means to understand a foreign or a different culture than ones own, and to conform to when this is desired. It means comprehension of the others manner of seeing, experiencing and judging, an accommodation to the other cognitive structure and adopting the others frame of reference. Though this is difficult yet it calls for a high degree of empathy, readiness to show empathy.

In an intercultural interaction, empathy is culture bound. Until knowledge and experience have accumulated so that a person from one culture can live the same feeling–behaviour relationships as does a representative of the other culture, empathy is more likely to be misleading than helpful.

The extent of intercultural understanding, misunderstanding or non–understanding is determined by the extent of likeness and difference in frames of reference, value systems or world views of the cultures involved, from their cognitive and affective distance from each other. Two psychological facts which are most important for comprehending intercultural communication are self–evident truths and the over–estimation of one's own and the underestimation of the opponent's position.

Schools of Thought

According to Asante, Newmark and Blake two schools of thought exist regarding the value of intercultural communication : the cultural dialogue group and the cultural criticism group. The former argue for theories that would promote world understanding and for them intercultural communication is one more attempt to organize society along mutually satisfying lines; taking cultural dialogue as a trend toward world communication. On the other hand, the cultural criticism group seeks to find the points of conflict in each culture in order to isolate them as researchable issues in transcultural interaction. For the cultural critics, there is little need to seek similarities and universals until a classificatory system that describes cultures is developed.

Saral describes intercultural communication as a form of interaction that takes place when speaker and listener come from different cultures and involves racial and ethnic differences. But it also exists when there are gross cultural differences without accompanying racial and ethnic differences. Intercultural communication is communication among members of two or more different cultures and requires unitive thinking, of intuitively appreciating the commonality of events and objects by subjectively experiencing, with the whole body, oneself as necessarily connected with an environment and the universe.

As such intercultural communication is a creative act rather than a mechanical process and while its components and variables are language, values, norms and the role expectations, the factors related to it include pitch, articulation, intelligibility, dialect and bilingualism. The dialect of the audience seems to be an important factor in determining the efficacy of communicating with the audience. Personal space, smile, posture, smell, eye contact, touch, attire and superstitions are involved in intercultural communication.

Sitaram and Cogdell consider intercultural communication as a whole new approach to the study of human interaction. Values play an important role in intercultural communication. Ignorance of values can cause intercultural misunderstandings. A value is defined as the guiding light which directs the actions of a people. Cultural values are developed to direct human nature. A value that is positive in one culture could, however, be negative in another.

Sitaram and Haapanen place values at the base of a discussions of intercultural communication and describe how values are communicated through verbal and nonverbal channels, the influence of our value system on how we communicate with who, and the difficulty of observing and measuring values systems. The two basic rules outlined for better intercultural communication are: the necessity of understanding others' values, and the ability to adapt one's communication in the face of difference, thereby generating respect and appreciation for diversity therein. Most communication is ethnocentric generating respect and appreciation for diversity.

International Communication

Whereas intercultural communication is an exchange of meaning between cultures, international communication takes place on the level of countries or nations across frontiers. Thus one tends to use the word international when speaking of communication purely on a political level, whereas the concept of intercultural communication corresponds to sociological and anthropological realities *(Maletzke).*

The factors in the international communication flow between nations are :

(a) national rank in the power hierarchy of nations;

(b) dominance and weakness of nations; and

(c) cultural and economic affinities.

International communication in general takes place not between countries into, but rather between single individuals or groups of two cultures. Thus intercultural communication does not come about haphazardly between certain people and groups, but in by far the great majority of instances, it takes place between communications–partners who share several things in common–similar education, common interests, a common profession, similar motivations, etc.

International communication comprises those transactions taking place across national boundaries or else within a national sector but affecting the ecology within which international transactions take place *(Merritt.)* International communication has become all behaviours by one actor of which another could be aware. Formal international communication incorporates diplomatic communication in which language and speech on the one part and the area of conflict resolution through communication of the other are elements. At the informal level international communication includes tourism, foreign student exchange, non-governmental organisations involved in voluntary service; aid programmes, and missionaries.

UNESCO Declaration

In connection with international cultural cooperation the United Nations Educational Scientific and Cultural Organisation's Declaration of the Principles of International Cultural Cooperation (1996) states that each culture has a dignity and value which must be respected and preserved and that every people has the right and duty to develop its culture and that all cultures form part of the common heritage belonging to all mankind. The Declaration sets forth the purpose of international cultural cooperation, its essential feature and the principle fields in which it should be brought into play.

The Declaration observes that despite technical advances which facilitate the development and dissemination of knowledge and ideas, ignorance of the way of life and customs of peoples still presents an obstacle to friendship among the nations, to peaceful cooperation and to progress of mankind.

The Declaration lays down the principles for international cultural cooperation. Some of the principles are as follows :

1. Each culture has a dignity and value which must be respected and preserved.

2. Every people has the right and the duty to develop its culture.

3. In their rich variety and diversity, and in the reciprocal influences they exert on one another, all cultures form part of the common heritage belonging to mankind.

4. Nations shall endeavour to develop the various branches of culture side by side and, as far as possible, simultaneously so as to establish a harmonious balance between technical progress and the intellectual and moral advance ment of mankind.

5. International cultural cooperation shall cover all aspects of intellectual and creative activities relating to education, science and culture.

6. The aims of international cultural cooperation in its various forms, bilateral or multilateral, regional or universal shall be :

(a) to spread knowledge, to stimulate and to enrich culture;

(b) to develop peaceful relations and friendship among the peoples and bring about a better understanding of each other's way of life;

(c) to enable everyone to have access to knowledge, to enjoy arts and literature of all peoples, to share in advances made in science in all parts of the world and in the resulting benefits, and to contribute to the enrichment cf cultural life ; and

(d) to raise the level of spiritual and moral life of man in all parts of the world.

7. Cultural cooperation is a right and a duty for all peoples and all nations, which should share with one another their knowledge and skills.

8. International cooperation shall respect the distinctive character of each.

9. Broad dissemination of ideas and knowledge, based on the freest exchange and discussion, is essential to creative activity.

10. In intercultural cooperation stress shall be laid on ideas and values conducive to the creation of a climate of friendship and peace.

International and intercultural communication may be the very same, but not necessarily. Often there exists international communication between people of the same culture but separated from each other by national borders. On the other hand it is also possible to find intercultural communication within one country if people of different cultures (and often with different languages–minority groups) communicate with each other. However while the media have the potential for improving and extending international understanding, intercultural communication does not necessarily or automatically lead to better international understanding (*Prosser).*

Problems in Intercultural Communication

Saral has identified problems in intercultural communication in adjusting from one culture to another as follows :

(a) The use of a second language; failures to adequately communicate in another language or adjust can occur in people who have the same language but different cultural frames of reference. Even with the same language proficiency, individuals may have difficulty communicating. The individuals have thus to have the ability to demystify the linguistic symbolic experience if they are to be efficient communicators in a given society.

(b) Personal cultural expressions, as outgrowths of our socialisation processes, can create intercultural dissonance. What one says and how one behaves during intercultural encounters are the cumulative results of relationships, heritage and status perceptions.

(c) An intercultural communication situation may be hostile, neutral, or friendly in terms of one's own cultural values. The greater the cultural contrast, the more likely the hostility between cultures.

(d) The historical content determines to what extent we are affected by intercultural experiences in a physical sense. Sensual triggering devices include smell, touch, taste. Tactile behaviour can be different in various cultures. The lack of tactile involvement seems more characteristic of some societies and not so characteristic of others.

In communication, specially intercultural communication, dissemination efficiency is source determined; attitude toward the information is audience is sudience determined.

Inter-racial Communication

Stereotypes affect human behaviour, especially inter–racial communication. Stereotypes about how an ethnic group communicates may predetermine the outcome of inter–racial communication. Ethnic stereotypes are operationally defined as favourable or unfavourable, irrationally formulated, generalizations varying in the intensity, uniformity, and rigidity with which they are maintained. The image one has of the communication of another group influences inter–racial interaction. Also each person's view of himself affects his as well as his partner's behaviour. Thus inter–racial behaviour is affected by the perceptions of a friendly in–group and a defiant outgroup.

A Guide to Intercultural Communication

Communicators in general and students of this discipline in particular need to understand and practice intercultural communication. In their profession they should have and understanding of the Eastern and Western ways of life and grasp an understanding of the use of language in te modern world of interrelations and publicity and propaganda. They should be specially conversant with the evolution of new vocabularies, like doublespeak which is a la mode to hide brutal realities. They have to, in addition, decipher the feeling states of people, and understand the meanings of gestures and postures besides have a knowledge of the spatial zones preferably people and the significance of various kinds of human touch. An orientation about the symbols and colours in different cultures could also be helpful in interacting interculturally.

The following tables could prove to be a useful guide for students and practitioners of what is becoming the field of intercultural communication :

1. Eastern and Western Ways of Life.
2. Doublespeak Vocabulary
3. Meanings of Brand Names/Slogans in Different Cultures.
4. Indications of Feeling States
5. Significance of Gestues in Different Cultures
6. Significance of Gestures (Hand Movements)
7. Significance of Walking Postues
8. Proxemics : Spatial Zones of people
9. Types of Touch
10. Significance of Colours and Symbols.

EASTERN AND WESTERN WAYS OF LIFE *(Miller)*

Western View	*Eastern View*
Individualistic	Collectivist
Independent	Inter–dependent
Egocentric	Socio–centric
Individually oriented moral code	Duty based moral code
Centrality given to responsibilities individual needs, desires and volition	Interpersonal as obligatory rather than voluntary
Interpersonal moral code is not rights–based *per se*; it forms part of a cultural system which gives highest priority to individual rights	Hindu conception of duty reflects both an individual's nature and requirements of the social order and extends through all forms of life rather than only persons. In viewing persons as inherently part of a social order rather than as autonomous.
Emphasis on rights to responsibilities, self–determination and to self–actualisation	Interpersonal treated as matters of social regulation

DOUBLESPEAK VOCABULARY *(Lutz)*

Western View	*Eastern View*
Politicians do not lie	Politicians miss–speak
Illegal Acts	Inappropriate actions
Fraud, criminal conspiracy	Miscertification
Potholes in streets	Pavement deficiencies
New Taxes	Revenue enhancement through users' fees
Beggars	Non goal–oriented members of society
Poor people	Fiscal underachievers
Death due to medical malpractice	Diagnostic misadventure of high magnitude
Kill the enemy	Service the target
Killing	Unlawful or arbitary deprivation of life; eliminate with extreme prejudice.
Neutron bomb	Radiation enhancement device; and efficient nuclear weapon that eliminates an enemy with a minimum degree of damage to friendly territory.
Civilian dead in a nuclear war	Collateral damage
Smelling something	Organoleptic analysis
Glass	Fused silicate
Loss or destruction of property through theft or property accident	Involuntary conversion of
Car mechanic	Automotive internist
Elevator (lift) operators	Vertical transportation crops
Used cars	Pre–owned cars, experienced cars

Western View	*Eastern View*
Black and white TV sets	TV sets with non–multicolour capability
To attack first	Pre–emptive counter attack
Troops ambushed	Engaged the enemy on all sides

Western View	*Eastern View*
Troops retreat	Backloading of augmentation personnel

Western View	*Eastern View*
To retreat	Straightening the front
Courage of a loyal ally	Reckless audacity
Specious cowardice	Prudent hesitation
Unmanliness	Moderation
Inaptness to act	Ability to see all sides of a question
Manliness	Frantic violence
Self defence	Cautious plotting
Trustworthy	Advocate of extreme measures
Bloody conquest	Pacification of the enemy
Traitors put to death	They have lived
Capital Punishment	Taking notice of a man inancestral manner
Prisoner executed	Prisoner was led away
Pencil sharpner	Appliance for millingwooden dowels up to 10 mm. in diameter
Typewriter	Instrument for recording test data with rotating roller
Jailed	Protective custody
Serious difficulties	Bottlenecks
Non–professional prostitutes	Persons with varied sexual relationships
Economic recession	Period of accelerated negative growth
Acid rain	Poorly buffered precipitation
Gangsters, mobsters,	Members of career–mafia offender cartel

Invasion	Incursion into territory
Bombing	Protective reaction strike
Lay–off	Selected out, placed out, non–retained, released, dehired; non–renewed; eliminate the eliminate the redundancies in the human resources area; assign candidates for derecruitment
Stock market fall	Stock market retreated, eased, made a technical adjustment; technical correction; prices were off due to profit taking
Stock market collapse	Equity retreat
Profit	Negative deficit; revenue excesses
Price increase	Price enhancement' price adjustment
War Department	Ministry of Defence
Department of Physical Education	Department of Human Kinetics
Home Economics	School of Human Resources and Family Studies
Library	Learning Resources Center
Desks	Pupil stations
Teachers	Classroom Managers
Slums or ghettos	Inner city
Cab drivers	Urban transportation specialists
Poor	Disadvantaged
Explosion in Nuclear Plant	Energetic disassembly
Lies	Inoperative statements
Illegal overthrow of a legitimate government	Destabilising a government

MEANING OF BRAND NAMES/SLOGANS IN DIFFERENT CULTURES *(Bonvillian)*

Company	*Product*	*Brand/Slogan*	*Country*	*Meaning*
ENCO	Petroleum	Exxon	Japan	Stalled Car
American Motors	Automobile	Matador	Spain	Killer

INDICATIONS OF FEELING STATES

Feeling State	*Body Movement*
Anxiety	Talking while moving hands; playing with a finger ring; moving restlessly; biting nails.
Guilt	When eyes and face suddenly come down; swallowing back.
Frustration	Excessively jerky movement.
Forcefulness	Snapping forward of head, arms, shoulders.
Bordeom	Head tilted or rested at an angle; doodling of figures; yawning.
Reflectiveness	Intense gaze; wrinkled forehead; down cast look.
Nervousness	Intently reading or looking at ones nails.
Strees	Smoking more cigarettes than usual; carefully crushing the cigarette.
Confidence	Letting off cigarette smoke upward.
Internal agitation	Rotating the thumb; tapping the feet.
Lying	Dry mouth; smacking of lips; irregular breathing; clearing the voice.

SIGNIFICANCE OF GESTURES IN DIFFERENT CULTURES *(Darwin)*

Cultural Group	*Gesture*	*Meaning*
Bulgaria	Nodding face up and down	No
Hindu/Muslim Culture	Nodding face side to side	No
Buddhists	Touching somebody's head	Inappopriate
Netherlands/ Switzerland	Pointing index finger towards oneself	Insulting the other person
Australian	Firm handshake	Greeting
French	Gentle handshake	Greeting
Latin and Mediterranean	Hugs, shoulder pats	Greeting
Thailand, Laos, India	Jointing palms together	Greeting
Japan	Bowing	Greeting. One with higher status gets greeted with lower and lower bows

SIGNIFICANCE OF GESTURES (HAND MOVEMENTS)

Movement	*Significance*
Jointing hands	Desire to persuade or underline a particular point
Hands jointed together	Total confidence
Hands held behind the back	Total confidence
Hands jointed together with finger and thumb	Confidence, pride
Head held in hand	Supression of fatigue embarrassment
Clenching the fist	Sign of aggression
Crossed hands with thumbs sticking out	Defensive attitude
Hand put lightly on chin	Thinking
Holding neck in hand	Controlling anger
Holding both hands behind the neck	Arrogance, confidence
Rubbing hand rapidly	Satisfaction
Rubbing hand slowly	Lying
Scratching the neck with hand	Doubt, uncertainty about what is being
Scratching the head	Perplexity, uncertainty
Separating the little finger from rest of the fingers	Desire to be different from the others
Putting hand in pocket and joining them finally or move the wrists	Liar
Touching face or head and reduction of conversational gestures.	Liar

SIGNIFICANCE OF WALKING POSTURES

Posture	*Significance*
Walking with hands in pocket	Indicates cold weather or a secret or reservation critical of others but rarely of oneself.
Walking with hands folded	Defensive attitude, lack of confidence.
Walking with head down,	Deep thought, wishing not
eyes fixed on ground	to be disturbed.
Walking with hands on the hips	Seductive, attractive.
Walking with body swaying	Egocentric, arrogant.
Walking with exaggerated hand movement	Rigidity
Putting hands in pocket and joining them firmly or move the wrists, touching face or head, touching nose frequently.	Lying

PROXEMICS : SPATIAL ZONES OF PEOPLE *(Hall)*

Space/Distance *Zone*	*Area involved*
Intimate distance	6 to 18 inches
Personal distance :	
(a) close	1 1/2 ft. to 2 1/2 ft.
(b) far	2 1/2 ft. to 4 ft.
Social Distance :	
(a) close	4 to 7 ft.
(b) far	7 ft. to 10 ft. or more
Public Distance :	
(a) close	12 ft. to 25 ft.
(b) far	25 ft. and more

People in dense crowds need six to eight square feet each while people in loose crowds require an average of ten square feet. Thus a crowd's size can be gauged by the formula :

Length x width divided by either 8 or 10 according to the density of the crowd.

TYPES OF TOUCH

Type	*Significance*
Professional Touch	of doctors, dentists, teachers
Social Touch	of greeting; shaking hands
Friendly Touch	of cordiality, encouragement, sympathy
Loving Touch	of parents, lovers children, close friends showing degree of confidence in the relationship.
Sexual Touch	that provokes sensual pleasure.

SIGNIFIANCE OF COLOURS AND SYMBOLES *(Sarkar)*

Colour/Symbol	*Significance*
Red	Vitality; excitement; courage enterprise
Deep Red	Aristocracy.
Yellow	Sunshine; cheerfulness; radiance; optimism.
Green	Peace; balance; prosperity; freshness; nature.
Dark Green	Tradition; reliability; reassurance.
Bright Green	Spring; fertility.
Blue	Coolness; vastness; truth; intellect; loyalty; security; contemplation.
Dark Blue	Industriousness; efficiency; authority.
White	Purity; truth; peace; virtue.
Pink	Feminity; cosmetics.
Orange	Knowledge; civilisation; luxury; flame.
Black	Beauty; sophistication; exclusiveness.
Gold	Rich; majestic; honour; wisdom.
Grey	Maturity; patience; retrospection.
Brown	Richness; fertility.
Elephant	Symbol of Buddha
Lion	Buddha Himself
Horse	Energy; solar animal; mount of Sun God.

Colour/Symbol	*Significance*
Bull	Physical strength; justice; virtue.
Peacock	Victory over falsehood or malice; performing arts; ability to dance.
Lotus	Purity spirituality; moving force of life
Banyan tree	Shelter; knowledge; experience; wisdom; festivals.
Fire (Agni)	Energy ; transformation ; purification.
Swastika	Supreme diety ; infinity; sun's power, well being.
Half Moon	Islam
Wheel	Cycle of birth, death ; Buddha's guidelines represented by 8 spokes of the wheel.
Sun	Universal
Square	Earth; stable shape
Square within a square	Qualities of human life.
Circle	Cosmos beyond (derived from the circular movement of the planet.)
Triangle	The three worlds; the positive, negative; the balance of apex represents male; the inverted triangle represents the female.
Cross	Durability; Christianity; plus.
Blue Cross	Nature; agreeability.
Red Cross	Care of sick; wounded.
Swastika	Religious symbol of Hindus, peace.

6

COMMUNICATION POLICY

Considering the nature and scope of communication and the advent of new technologies and cyberspace which on the one hand are leading to the erasing of national frontiers and giving to the people the possibility of interacting with people around the world according to their specific interests, political and social convictions, and on the other hand, posing challenges to sovereignty of nations and their national and cultural identities, the need is for the formulation of national communication policies.

Though the debate on the desirability of such policies began in 1970s, the technological developments since then more than ever call upon developing countries like India to define their policies as to how they view communication within their respective institutional frameworks and their desire to participate in the cyber revolution and at the same time preserve their sovereignty and national and cultural identities. The important thing is to have a well–defined policy. Though there could be written or unwritten policies or just guidelines or administrative orders or codes of ethics (*Desai*, 1977) some even aver that absence of policy is itself a policy.

Many countries do not have explicit defined national communication policies and in the context of India there are no resolutions which define the chief objectives of communication, its objectives and functions. However there have been *ad hoc* reports of committees and commissions dwelling upon one aspect other but none that defines in to the policy aims and objectives. It has nevertheless to be noted the recommendations of these committees were rarely implemented *(Thomas, 1993)*. The reasons for this is that the communication policy making process has suffered from a lack of direction and has been leaderless. The communication policy making apparatus has not either existed.

The necessity of having a formal policy cannot be denied because, as was summed up by McBride, there can be no "genuine, effective national independence without the communication resources to safeguard it".

Factors Determining the Need for Policy for India *(Mathur, 1998)*

The Cyberspace Factor

The opening up of cyberspace and the establishment of information highways is bringing together people in direct contact the world over for sharing the tremendous knowledge and information that has become available in recent years. Such interaction across national frontiers is ushering in an economic and social change. Though such might be the positive aspect of recent developments yet these can also be used for subversive activities. India therefore has to fashion its policy in the light of technological advances and for ensuring a harmonious blend with culture and democratic traditions of society.

India is transiting from the age of agriculture into the era of information and cyber evolution and policy makers have to ensure that the country not only remains in the front line of the information, knowledge and cyber age India but also retains its traditions, cultural and spiritual legacies. India being the world's largest democracy should become the world's largest cyberdemocracy beginning with the dawn of the 21st century. A policy to ensure this is therefore a must.

The modern, interactive electronic technology and cable and satellite broadcasting is bound to strengthen the India cyberdemocracy. This technology is going to be instrumental in connecting people to one another and enable them to exercise their right to choose their respective ways of life, political opinions, entertainment and consumer commodities.

Moreover, with the proliferation of television and its influence on the minds and actions of the people influential telecrats, as against bureaucrats, will achieve power and prominence and will not only be in the public eye but also be telegenic. The role of the mass media to protect, pressure and promote democratic, socialistic and secular polity as provided for an in the Indian Constitution *(Yadava, 1995)* will also help the people to be involved and participate in socioeconomic and cultural development and help the country to leapfrog *(Sarabhai, 1969)* into a new era of progress, progress, prosperity and cyberdemocracy.

However, this calls for taking corrective and effective steps to deal with the strange historical convergence in India of Public concern for the downtrodden and elitist concern for bureaucracy to promote their own interest *(Yadava, 1979)*.

For evolving a national communication policy for ushering in a vibrant Indian cyberdemocracy what is needed, firstly, is the definition of adequate policy making structures and their scope and functions by benefiting from the experience already gained and the recommendations of the various committees and commissions and, secondly and concurrently, to arrive at a definitive policy declaration. In this regard it is vital to orient and sensitive the legislators and bureaucrats about the need for such a policy.

Another factors to be kept in mind that India is the world's second largest consumer market and its potential in electronic is huge with almost 100 owned manufacturing plants, more than 470 large scale and medium scale private firms and more than 3,000 small scale production units. This industry, though advanced as in developed countries, has applications in key establishments like defense *(Kodali, 1995)*.

A communication policy should also prepare for the digital age and the convergence of digital technologies -with most satellite systems offering digital compressed services–which will enable interactive multimedia applications as the market place demand grows and the technologies become more accommodating.

Moreover, decentralization should be one of the guiding principles to be enunciated in the national policy so as to ensure equitable and just coverage of the feelings and concerns of the people from all over the country.

The orientations referred to above along with decentralization constitute the basic criteria for the success of the inevitable cyberdemocracy (*Ogden,* 1994) which alone will ensure that the people at the grassroots level fully participate and are involved in the conceptualizing and implementation of such a policy.

This is not to say that there has not been any realization of the need for the development of a national communication policy. There have been muted, oblique, indirect references to it in the form of statements in the five–year plan documents or as guidelines issued to the official media units. The most recent open, formal policy statement came in the form of the National Telecom Policy (1994). The next step, its emphasized, should be the declaration of an overall national comunication policy. Furthermore, the very nature of communication as outlined already and its ramifications warrant the formulation and definition of a policy with due regard to the socioeconomic, cultural and political implications of modern technological advances.

However, the linguistic and cultural diversities and varying levels of development in different regions of the Indian society make communication the most challenging task in contemporary India (*Yadava,* 1995) along with attempts to define the nature, scope and objectives of a national policy. This formidable task has, however, to be accomplished in view of the technological, socioeconomic, cultural and political trends, the international convenants, the provisions in the Constitution of India and the judgement of the Supereme Court of India.

The Technoogical Factor

A trend visible internationally is that those who control the media tend to control the society *(Reddy, 1989)* and that economic domination tends to folow media domination. Moreover, present day communication knows no national frontiers because rapid technology changes have opened countries and communities to virtual invasion of information, opinions and messages from outside sources and distance, time and language are no longer a barrier between people who can be reached instantly practically everywhere. This development highlights the fact that the major task facing communication is to ensure national sovereignty, cultural identity, and safeguard fundamental human rights including the right to communicate since the proliferation of moden technology is being used as a tool for wielding, social, economic, cultural and political influence.

Another compelling factor for having a formal national communication policy is the unstoppale satellite and cable revolution; the former trespassing national boundaries and sovereignty and the other infringing copyright laws. These technological innovations which allow trans–border data flows are a challenge to India's ability to respond to, or to regulate, the flow of messages from outside.

Call of the Constitution

The backdrop for the formulation of the communication policy should be the UNESCO's New Information and Communication Order. The McBride Commission which preceded this order held the view that there could be no genuine, effective national independence without the communication resources to safeguard it. On the other hand, late Prime Minister Indira Gandhi emphasized that progessive self–reliance in communication technology is an essential ingredient of economic self–sufficiency and true independence of political decision making *(Gandhi, 1983)*.

Today there is increasing recognition of the facts that information is indispensable for he functioning of the facts that information is indispensable for the functioning of a true democracy, that society needs a forum for discussion and informed criticism, that communication is a prerequisite of governance and a key factor in the process of direted and planned change for ensuring the participation of the public in the communication systems and for maintaining contact with the people governed.

Verdict of Supreme Court

The Supreme Court of India has emphasized that the referral point for policy formulation and decision making should be the Constitution of India whose main objective, as envisage din the Preamble, is to secure liberty of thought and expression to all citizens. In order to give effect to this objective "freedom of speech and expression" has been presented as a fundamental right under Article 19(1) (a) subject only to the restrictions which may be imposed by the State under clause (2) of that Article. Freedom of expression includes all possible forms of expression thoughts, feeling, and convictions by writing, printing, pictures or by any other means.

The Supreme Court has further maintained that the fundamental right to freedom and expression includes the right to communicate effetively to a large population in the country and abroad.

Another significant ruling of the Supreme Court has been that the airwaves are public property to which every citizen has a right and on which the governemnt has no monopoly. It has further held that airwaves are a public property, and, as for petroleum or minerals, it is a public body that should manage and control their utilization.

U.N. Declaration of Human Rights

Another source for the development of a communication policy is the United Nationss Declaration of Human Rights followed by the International Convenant on Civil and Political Rights which India ratified in 1978. Article 19 of the Convent declares that everyone has the right to freedom of opinion and expression. The right includes freedom to hold opinion without interference, and to seek, receive and impart information and ideas through any media regardless of frontiers.

Right to Communicate

Another factor that calls for a communication policy is that there are no geographic barriers to communication and every citizen has a right to use the best means available to him or her for hearing and watching broadcasts and telecasts. For exercising this right to communicate the government, non–governmental organisations and educational institutions ahve to develop programmes to educate the citizens to determine what type and how much of information they wish to have access to in the light of their individual aims and objectives.

Cultural Considerations

While Yadava has observed that "sociologically speaking there exists a strong coherence and close relationship between social structure, culture, communication and development processes" and that "changes in one have importance bearings upon the other, Yogendra Singh remarks that "since cultural challenges are likely to be generated by market capitalism, information technology and pressures of globalization of culture, a policy framework to meet the challenges becomes inevitable. Such a policy framework must take into account the need to enrich and protect local and regional cultural values, practices and identities in the process of cultural exposure to mega–institutions of mass communication and modernization".

The Joshi Committee, on the other hand, observed that "a cultural and comunication policy relevant for India in the curent phase must assist in ensuring the rootedness of the present and future generatios in their rich and life affirming cultural heritage".

Undoubtedly, there is also the need for a policy to help in creating new art and cultural forms, for protecting, preserving and adapting tradional art forms and cultural forces which provide vital links of continuity between the preent and future generations.

Development Support

The very raison d'etre of a communication policy has to be the progress and development. To bring about such development, recourse has to be taken to an integrated communication policy and planning aiming at knowledge, attitudes and behavioural change by utilizing the modern electronic mass media as also the community's own traditional and fold channels of communication, community organisations, group and interpersonal communication *(Mathur, 1994).*

Communication being a precondition of development, access to and control over its means and process *(Hoover, 1993)* requires a national communication policy for the development and utilization of its technology and infrastructure, for assisting socioeconomic and cultural development by encouraging the involvement and participation of the people at grass–roots level in the planning, implementation and for assessment of the impact of the policies and programme envisaged thereunder *(Mathur, 1994)*. Such involvement and participation can be easily ensured since modern technology can help communicate with people easily, Such a policy evidently would have to take into consideration and guard against the fact that "besides facilitating development processes increased communication is making socioeconomic disparities, existing or resultant from development, more visible and perceptible and hence less or resultant from development, more visible and perceptible and hence less willingness to tolerate social injustice and inequalities *(Yadava, 1995).*

Communication policy, in other words, is necessary for economic and social development *(Masmoudi ; Mathur, 1994*) and for ensuring and safeguarding sovereignty. Such a policy furthermore has to be looked upon as an integral part of develpment policy. Moreover, a national policy should encourage and ensure investment in the development of multifarious and high quality software since "no country can affort to sit back passively andlet some foreign agency decide what kind of programmes should be broadcast to the people of the country *(Vardan Committee).*

Emergence of Market Economy

Another impelling force for the development of a communication policy is the emergence of public opinion infavour of laissez faire, the emergence of a vibrant market economy and the verdict of the Supreme COurt declaring that hte airwaves are public property subject to public controlled autonomous authority. However, it has to be ensured that though investment is necessary, market forces do no lead to an abuse of electronic media. Instead, the availability of resources should help India to tap, in the words of Dr. Vikram Sarabhai, the most advanced technologies for "leap frogging" into rapid economic growth and social transformation.

Redressal of Inequialities and Narrowing of 'Gaps'

In addition, what calls for a communication policy is the need for redressal of inequality in the distribution and control of national communication resources and the need for narrowing the gap between the urban oriented media and knowledge 'haves' and the ast rural have–nots in the interests of integrated national economic and social development *(Verghese, Unesco)*.

Further, there is need for a policy designed to heal social, economic, lingustic, cultural and ethnic divisions so currently manifest– a policy that emphasis the infinite variety and diversity existing in the country and put it in the broad perspective of national unity and territorial integrity. Thus the policy has to aim at upholding national sovereignty and territorial integrity of the country, in the words of the late Prime Minister Indira Gandhi, "to foster the unity and strength of the country, and to modernize the country while maintaining our traditions and preserveing our culture and our civiliation".

Policy Objectives

There are the following seven national communication policy directions that need to be taken :

1. Guarantee autonomy for growth and development of communication media and telecommunications.
2. Ensure equitable access and participation of all people all over the country in communication for development and for socioeconomic and cultural change.

3. Ensure the development of a national information and communication infrastructure and its linkage with global information highways.
4. Safeguard fundamental freedoms.
5. Safeguard and preserve national integration, cultural identity and national unity and territorial integrity.
6. Ensure both public and private sector investment in priority areas of communication.
7. Prepare for astrophysical age and futurological planning.

The emphasis in the communication policy should be that it should be problem–oriented, prople–oriented, development–oriented and enrichment–entertainment–oriented. Neglect of any of these will necessarily make the policy lop sided and ineffective. The policy should take congnisance of the fact that the risk is not in the computerization of culture but in the computerization of the model of consciousness itself. The direction should be that the generations co come should not have a distorted or manipulated version of our culture.

Moreover, the communication policy should be geared for the digital age because the covergence of digital technologies will alter fundamentally what today might be the assumptions for a policy.

Mention here may be made of the Paswan Sub–committee Report (1996) entitled "National Media Policy–A Working Paper" submitted by the sub–committee of the Consultative Committee of the Ministry of Information and Broadcasting. The Sub–Committee proposed the following objectives of Media Policy :

1. Not to permit growht of monopoly in any media.
2. To project the developmental needs and social, cultural and economic aspirations of the people, particularly in the rural areas who constitute a bulk of the population.
3. Strengthen, preserve and promote our democratic tradions, culture and values, national integration and scientific temper.
4. Promote and strengthen sense of national integrity built on secularism, socio–cultural pluralism and linguistic diversities (unity in diversity).
5. Facilitate greater access to information, education and entertainment in that order to all sections of the people.

Convergence of technologies is dismantling the borders between various types of media and globalisation is breaching political borders.

The interconnected nature of mass media has led to mergers and created multimedia conglomerates across countries, and region to reach global markets.

Globalisation, on the other hand, is no other incidental to our lives but is the way we now live, it is economic, political and cultural.

The global village has been born and the marvels of ICTs have expanded the concept of neighbourhood to include people in distant lands and brought together people of similar interests and callings so that they can write to one another instantly, take of one another instantly and see one another instantly while sitting in ones home or office works apart. Instant technology has made instant contact possible. It has yet to be seen whether the global village would have a global culture or thrive in cultural diversity or will it contribute to a worldwide homogenisation and cultural globalisation.

Moreover, the questions that arises are whether the global village-inhabited by people of divergent political systems and cultural compositions, will highlight issues of sovereignty and conflicting legal systems whether wider individual choice and interactivity and easy, instant access by instant technologies to knowledge pose problems of copyright and intellectual property rights. And with the advent of multimedia conglomerators and multinational business, will the global village be spared of global pillage and exploitation ?

A creative and empowered society, a teledemocracy, or call it cyberdemocracy of which information and communication techonologies from the infrastructure has come into being– a society in which all citizens could have access to information tools, to access knowledge and in which the Government and society as a where have a strong presence and use internet–based information tools in the ordinary business of life.

Citizenship in the information society assumes that people will be able to obtain information on matters affecting them and be able to participate and do business electronically. Decision making affecting citizens thus has to become transparent, not faceless. Moreover, would cyberdemocracy, teledemocracy, be really so and it guarantee the equality of citizens so that cleavage in society is not manifested by haves and have–nots, ICT literates and illitrates.

And though everybody would have access to knowledge and the tools to be used to access it, the problem of safeguarding secrecy of individual and business data and information would have to be enquired. This specially so because by accessing somebody else's data or files unscrupulous persons could change the content thereof while others could market this information. The question which we will have to ask ourselves in the future is as to how much of information about ourselves we are prepared to surrender to gain new knowledge and experience.

8

THE TECHNOLOGICAL REVOLUTION

The Multimedia Revolution

The definition of multimedia, is 'media in which spatial data (text, image and sound) are merged with emporal data (voice and video), by means of a unifying object– the computer.

Multimedia is situated at the crossroads of a large number and variety of techonologies and economic sectors. This sector is developing and expanding in various ways.

The multimedia revolution is seen to result from the development of the *following three types of media :*

1. **Computers :** multimedia producers nolongerneed to be computer experts to create documents which combine text, sound and image on a compact disk-read only memory (CD-ROM), CD-Interactive (CD-I,) Digital Versatile Disk (DVD) or the Internet.

2. **Digital Video :** television is moving towards interactive television (i–TV) and video on demand offered by cable distribution networks.

3. **Network Superhighways :** carrying Internet traffic and information of the future, on which all kinds of interactive services such as electronic mail, voice telephony and videoconferencing, electronic commerce are already flourishing, and soon, perhaps, television on demand.

Multimedia products which can be developed on various types of media, such as diskette, CD-ROM, CD–I DVD–ROM, interactive terminals, and closed' or on–line networks are grouped into two broad categories :

1. **On-line :** products which can be consulted via telephone networks cable or broadband networks known as "information superhighways" such as the Internet.

2. **Off–line multimedia :** contents which are not transmitted directly via networks, but are pre-recorded. In other words, they are contained on a tangiblemedium such as a diskette or compact disk.

The convergence among various communication and information technologies due to the development of digital technologies is stronger than ever before. The borderlines between areas which were formerly separate are becoming more and more blurred. Large business and industrial concentrations on a global scale are taking place, showing a strong moment in the same direction.

The impact of ICTs on the media takes many forms and, given the central importance of the mass media in contemporary societies, the *issues that arise are freedom of the media, public service broadcasting and the use of ICTs by the media.*

Public service broadcasting makes good use of the opportunities by new technologies, such as wider individual choice and interactivity. Public service broadcasting may also be instrumental in the struggle against the threat of worldwide homogenisation and cultural globalisation. It should contributed to strengthening notions of identity and community and to establishing adequate interaction between citizens and their closer or wider communities.

Digital techonologies, and more particularly the Internet, offer new vistas in this field. Information professionals and users, can avail of a wide range of new facilities access to catalogues on an international scale, development of unprecedented storage capacities in digital libraries and archieves, a worldwide information base for searching and retrieving offered by the Internet. The only negative point is the threat of the introduction of fee–based services i a profession where the tradition of free services is deeply entrenched.

There has been an extraordinary rate of innovation in ICTs. The rapidity, diversity and multiplicity of the innovations in the ICTs is both impressive and seemingly endless and the integrative power of digitisation and interactivity is bringing about a multimedia revolution. The overall context is set by the Internet–related technologies. Text come significant progress in computer hardware and software, peripherals, memory and data bases, user interaction, virtual reality, networking, local wide areas network, telecommunication, telephony and the World Wide Web (WWW)... As mass media, radio and television have always held a place between techonology and culture. They have utilised the latest applications of tehonology, then electronics and now informaiton techonlogy.

Radio and television reply on music, acting live expression, story telling and debate. These two media reflect the continuation of age–old cultural traditions and are the most important conveyors of myths in modern society. They provide techonology–based change and it is the encounter between the very latest and the very oldest that makes the audio–visual mass media a unique meeting point in the emerging informaiton society.

Convergence

Convergence arising from techonological development is a compelx phenomenon. Convergence refers most frequently to the integration of the techonological bases of a variety of media. In other words, it means that various mass media are based on identical information techonologies, replete with microchips, processors, bit flow and software applications.

Convergence is altering the marketing of programmes and information production. The rapidly expanding economic potential of convergence is leading major international companies to invest unbelievable sums of money in the fields of data processing and communication which are now the driving forces of the information society.

A classic example of new techonology converging to support an old predecessor is the techonology to stream sound over the Internet. The techonology is very simple and affordable at both ends. People can receive such Internet radio broadcasts with a relatively low investment while broadcasters can be "on the air broadcasting literally to the whole world at very minimal cost."

Information technology is revolutionising the world of broadcasting and digitisation is perhaps the greatest transformation ever encountered in radio and television. It is introducing elements and characteristics to the broadcasting media not previously associated with them, because digital radio and television are at one and the same time individual and mass medium.

The three new aspects of digital broadcasting care are :

Features of Digital Technology;

The features of digital technology are that it affords :

(1) listener and viewer choice.

(2) new multimedia content and

(3) interactivity.

1. One of the most significant features of the digital distribution technology is the way in which it multiplies the available distribution capacity. Thus in the future it will be possible to provide viewers and listeners a number of simultaneous services such as variously profiled general channels, thematic channels and the channels.

2. Digitisation means that all forms of information, whether print, image or sound, are stored and transmitted in the same physical form. This convergence is also reflected in convergence among institutions and professions, since all those working in this environment deal with media stored and exchanged incidentical ways. In the future there might well be convergence between information producers and intermediaries.

3. Converging media technology is also opening up a new landscape for creativity and aesthetics. One of the most significant aspects in broadcasting concerns the **convergence of television and the Internet.** This means not only the integration of distribution of internet services on television and vice versa) but also new developments in the field of expression. Those involved in creating audio–visual culture must establish completely new screen aesthetics, dramatic storytelling and a language of expression in which the structures of the electronic network media and visual television merge together to generate a new media language.

Another new element introduced into the broadcasting media by the new digital techonology is interactivity. Previously the traditional mass media did not allow for two way communication but today ever large sub–audiences are expecting interactivity from mass media services. Interactivity should increase the viewer's potential for greater participation. The success of Internet chat services indicates that they are meeting a genuine need for participation and exchange in modern society. Similar new forms of interaction will also form part of the broadcasting environment in the coming years.

Television has replaced the traditional "user–interfaces" which included a variety of socio–societal structures such as place of residence social class, religion and profession. Radio and television have become a value–value and culture– arena which reinforces personal identity.

Experiencing something as one's own is one of the most important value bases of the information society. Unless people find intellectual, community, environmental or material values with which they can identify in the networking and diversifying media, change is likely to lead to confusion and chaos rather than to the moral strengthening of the community.... Broadcasting must endeavour to meet the feeling and meaning of the audiences'commonexperience. Pluralistic media are fundamental to the value system of democratic societies..... Public service broadcasting must provide citizens with media that would be independent of both government and economic control.

Public service broadcasting is also based on the concept of an active, developing and self–fulfilling human being. Public service broadcasting has traditionally been given the mandate to produce programming with informative, educative and also entertaining content. It has been expected to meet the needs of the various facets of the personality in a balanced way so as provide a whole image of he individual. Public service broadcasting best carries out i, mission in the information society when it provides all segments of the audience with cultural material to reinforce a positive sense of identity and self. It must become aware of this key characteristic and must emphasis it as a core element of its mission.

The Advent of Internet

However, the situation has now changed with the abvent of the Internet.

Communicating via network media and the Internet, audiences now have unrestricted access to those source of information that were previously beyond their reach, behind, inter alia, a variety of media gatekeepers. **Such communication built upwards does away with**

the need for public service broadcasting which, despite everything, is always constructed by programming planners and gatekeepers.

The Internet era has multiplied the individual's opportunity. Immediate organisations on the Internet will find better ways to match the needs of potential customers and suppliers of goods and services, for accessing new, geographically distant sources of information which are not dependent on fixed–time programming schedules. The limits of time and space are disintegrating ; in particular, the Internet has opened upto the borders of the world to its users and promoted the unrestricted movement of information (or trade) in a manner that is without parallel in world history, It has also facilitated genuine debate among people united by a common topic of interest. Indeed, many information networks are complementing the diverse sources of news used by broadcasting.

The Internet is creating a revolution in society just as significant as the Industrial Revolution.

Internet has boosted e–commerce which will continue to flourish with a move away from prepackaged buying options prepared for sellers, to more opportunities for customisation and other user–defined products and services. Intermediate organisations on the Internet will find better ways to match the needs of potential customers and suppliers of goods and services. Since current applications on the Internet have focused increasingly o n electronic commerce, the need for careful consideration of the many public–policy issu es has grown. These will not be amendable to rapid solutions and will no be amendable to rapid solutions and will require continued involvement of governments around the world in cooperation with the private sector.

The basic operation of the Internet has long since moved to the private sector, but its continued evolution will depend on providing the kind of universal connectivity for data exchange with general accepted open standards that current users have come to cherish. Issues of sovereignty and conflicting legal systems will continue to define the limits of what is and what is not possible but increased cooperation and collaboration over the Internet may have the effect of bringing our various systems together.

While the Internet will surely continue to contribute to economic growth, it will take both strong resolve and commitment to avoid the inequities which would result from having technologically created a world of haves and have–nots.

The advent of the Internet is having a negative effect on traditional telephony. Very soon voice traffic may be flowing through the Net rather than through the conventional telephone lines and heavy use of e–mail and short messaging via the mobile phone may be the order of the day.

The Internet Protocol (IP) telephony, also known as voice over IP (VOIP) is fast bringing together media such as voice, data and video over a single, feature–rich network. Though lower sound quality and unreliable connections will continue to plague for sometimes, the global IP telephony will continue to grow and global revenues will climb. **By 2003 the obsolescence of the traditional telecoms will be widely accepted.**

The advantages of IP over conventional lines are manifold. IP networks are cheaper to build, maintain and upgrade, which translation lower costs for calls. IP ca delivery over a single line a range of new services that seemlessly integrate voice with data and video, including unified messaging, an in–box capable of converting faxes into voice mails and voice mails into e–mails, Web–based voice access to customer service centers, and video–conferencing.

When the coverage of IP is complete voice calls will likely be free as operators move to charging for higher value–added services. In due course basic services will be free following the cable television model, where cable TV companies provide a cable and maybe five channels free of charge.

Mobile Commerce

Big firms are devising ways to capitalise on the coming mobile commerce boom by combining mobile handsets and networks, security software and smart cards. They are also putting together a globe–straddling wireless network that will offer mobile internet services besides working on cutting edge techonology concentrating on the high–speed wireless local area networks of the future.

If mobile commerce is to take off, security must come first though GSM phones provide some security through personal identification numbers and authentication protocols, fully fledged wireless commerce requires a higher level of security. Security solutions of mobile services are being developed. Thus Smart Cards in the phone will be equipped with a techonology known as public key infrastructure (PKI) which uses asymmetric encryption to protect data. This form of encryption, which relies on a public key and a private key, is stronger than what is generally available on PCs.

In July, 1998 the number of computers connected to the Internet was 36.7 million..... As both the sources of information and the number of connections multiply, the need for meanings that unite also grows. One of the most important challenges of the information society, **beyond making information available, is to enable analytical interpretation of it and to facilitate understanding.**

Citizenship in an ICT Society

Citizenship in the information society also presents a challenge. Boundaries are being broken down, the roles of states are changing, many operations are being.

Decision–making in matters affecting citizens is becoming more distant and is, in many cases no longer recognizable. **An integrating and globalising world, where decision–making is often faceless, offers a particular challenge to the media.** In order to enjoy full citizenship in the information society individuals must be able to obtain information on matters affecting them personally and to feel that they can influence such matters.

Citizenship in the information society also signifies that individuals can increasingly and naturally participate and do business elecronically.... In a democratic information society populated by active citizen, encouraging the ideals of citizenship and of civil duties and rights is particularly important and should therefore be a core element of the future mission of public service broadcasting.

Citizenship in the information society implies that individuals have the right to relevant and reliable information... Citizenship is closely tied to equality and all members of the community must have an equal opportunity to obtain basic information service, for example, equal access to communication networks... This raises the original question of whether the information society is for everyone, or for only a few.

The quickly evolving techonologies signal the arrival of unlimited possibilities for innovation and growth.

Convergence and Globalisation

Two words : "convergence" and "globalisation", simultaneously arouse both hope and fear among media owners and concerned consumers of information.. Convergence implies the dismantling of boundaries between the main types of media and globalisation breaches political borders and gives rise to international media organizations which operate free from local supervision.

Convergence and globalisation are the result of digital technologies operating together with satellite broadcasting systems. Since media affect the lives of a majority of people, these two phenomena will have far–reaching consequences.

Integration and Expansion

The increasingly interconnected nature of the mass media industry has encouraged integration in a complex variety of reciprocal connections.

The first set of logical mergers were between different types of media, such as television with radio and the press to create multimedia conglomerates. Mergers of media entities across countries and regions also occurred in order to attain the critical business strength needed to reach global markets.

The expansionary trends of the media conglomerates, coupled with media techonologies which ignore political borders, have forced government–owned media organisations in newly developing and developed countries to respond. In Asia the response has been to privatise state–owned media in an effort to make them more competitive and attractive to domestic audiences. However, the privatisation has been structured in such a way as to protect, preserve and empower traditional cultural values and maintain key government controls at the same time.

Impact of ICTs on News

The latest techonologies provide the perfect tool for gathering and disseminating news... The increasing demands is not only for a greater quantity of news, but also for higher speeds in reporting.

The demand for news over the Internet appears to be more consistent, with nearly all news sites registering the most number of visitors and Web pages downloaded.

Direct satellite broadcast television has caused an insatiable demand for the latest news, which has in turn created the 24-hours news cycle. Now that the audience is global every moment of the day and night is the deadline. The concept of 'the edition' has been replaced by devices such as 'breaking news' when regular programming is interrupted in television broadcasts, to show raw, live coverage about a still evolving news item.

The race to be first on the air or the Internet with the latest news has created an approached to news reporting which concentrates on the immediate, the gathering of eye-witness accounts, and a follow-up of the event as it unfurls and draws to a conclusion seven daily sins of television news :

1. imitaiton
2. predictability
3. artificiality
4. laziness
5. oversimplification
6. hype
7. cynicism

The same television news clips are broadcast by stations around the world, while the same wire service dispatches are carried in the newspapers. This provides the handful of international news agencies which feed the media organization around the world with an oligarchi grip on the flow of news and views. **This phenomenon is called "consonance".**

The Internet has helped to inject a level of participation in news commentary that did not exist in the past. The low coast of using the Internet by the audience permits live participation at the global level on a sustained basis. Newsmakers now use the **Internet to reach out directly to the audience, bypassing the media. Thus court judgements have been posted directly on to the Internet, as have copious copies of original reports of powerful government appointed authorities.**

The danger of spreading unreliable information via the new techonologies done not emanate solely from the information providers.

The Internet is particularly vulnerable to interference from third parties. Skilled and determined computer hackers have been known to gain unauthorized access to all sorts of information serving systems to make disruptive, and sometimes malicious, alterations to the infomation posted.

Paradox of ICTs

The built–in paradoxes of ICTs are :

1. While access to information and communication is becoming and PCs are better and faster and cheaper, the development of techonology, software and data processing requires more and more capital investment and this is leading to global monopolies among producers and vendors ;

2. The enhanced access to ICTs is giving rise to a new type of illiterates, those who have not frown up wit the techonology and are therefore at a disadvantage on the employment markets ;

3. The development of ICTs has principally taken place in the developed world where relatively expensive labour has been replaced by machines thus reducing the cost of production and services ;

4. The developments are so rapid that there is a general lack of qualified personnel ; and

5. American English may achieve a more dominating position in Internet.

9

TELEDEMOCRACY AND CYBERSPACE

Teledemocracy is the adaptation of Internet–based information tools by government, business, and civil society to create an advanced participatory from of democracy. In its purely theoretical form, teledemocracy is the use of the Internet to produce an informed and publicly active citizenship.

But in its current form, teledemocracy is a misused and misconstrued term ; while the prefix 'tele' explicitly means 'distance' or 'way of', adding the concept the Internet gives teledeomocracy a more technical characteristic.

Empowerment is the foundation of teledemocracy. In order to fulfill the ultimate goal of empowering citizens, two measures must be put in place :

1. All citizens must have access to information tools. This highlights the importance of universal access to knowledge and participation in the Informaiton Society.

2. Government, business, and civil society must have a strong and committed Web presence. Teledemocracy cannot advance properly without the necessary balance between these three groups.

The process of teledemocracy starts locally with a virtual administrative body which consists of Web sites sponsored by local governments to facilitate exchange between elected officials and local citizens. Experiments of this kind are being carried out all over the United States, in parts of Europe, and other democratic countries. The Web sites are a dedicated forum for public policy debate, government outreach programme, and in some cases, replace conventional mail with e–mail.

Teledemocracy is further promoted through cyber–neighbourhoods, which care connected communities with access for each individual family, and cyber parties, which are representative groups that encourage on–line public participation. Both serve the function of increasing citizen partnership, through direct, active lobbying by citizens. On line lobbying is no longer restricted to government and business ; informed and empowered individuals can take an active role in voicing their opinions.

In non–democratic countries and governments in transition, teledemocracy is practiced differently ; through teledemocratisation, which is the use of Internet–based information tools to promote knowledge-sharing among citizens and to organis citizen opposition groups. In turn, it may be used to circumvent oppressive regulatory efforts and facilitate discussion among civil societies, government and business.

The effect of teledemocratisation cannot be underestimated : the technical aspects of the networks allow the technical solutions to offset government propaganda, censorship, and other repressive measures. Such is the case with Radio B92 in Belgrade. When shut down for its anti–government broadcasts, the station moved onto Internet, and was rebroadcast into Yugoslavia by Radio Free Europe and Voice of America. It has become the sole source of independent reporting in Yogoslavia and a rallying point for democratic opposition.

Teledemocracy is only begining to gain recognition for what it is : a valuable tool to produce an empowered and active society. While the theoretical evolution is still in its infancy, functional teledemocracy is already spreading to may parts of the world. Virtual local administration are being envisaged and constructed, citizens are becoming more active in communities through cyber–neighbourhoods and government regulations are circumvented technical solutions offered by the Internet.

In step with advancement of information and comunication techonologies, teledemocracy may well be a fast–developing, governing, characteristic of the Information Society.

Emergence of Information Society

The emergence of an Information Society, with new systems and modes of expression, representation and action, is a major challenge to the machine governement.

To respond to this challenge the governments have to frame integrated policies and strategies, taking account of the convergence of telecommunications, information techonology and the electronic media, whic will enable them to adapt themselves to this new techonological environment and take advantage of the opportunities if offers.

Coping with Information Highways

The most striking aspect of this new environment is cyberspace, which is also known as "information highways".

This new electronic space, open to all forms of expression, information exchange and transactions, is becoming progressively accessible to an increasing number of people, whatever their age, geocultural origins or occupation.

The ICTs which form the infrastructure of cyberspace, more particularly the Internet, are used for many different purposes, for the best and worst. The new environment transcends state borders and largely escapes national jurisdiction.

A strategy should be developed in India around two lines of action :

(a) to encourage international interdisciplinary reflection on the ethical, cultural, A legal and social issues which characterize the emerging Information Society ; and

(b) to promote the use of information technologies for the development of education, science, culture and communication.

Moreover Indian programme should be undertaken to :

(a) promote ethical values and legal principles for a democratic and participatory information society in collaboration with producers and users of ICTs and providers of cyberspace information and services;

(b) promote universal access to information and create the conditions under which the information Society can guarantee respect for privacy and personal data, enrich all lives, include the excluded and disadvantaged, ensure cultural pluralism and be free from violence, pornography, paedophilla, racism, alientating ideologies and criminality; and

(c) forest freedom of expression, the free flow of information, access to knowledge for all throughout life, scientific research, artistic creativity, the protection and enchancement of the heritage and the common good.

10

INTERNET : TRANSFORMING BUSINESS PRACTICES

The Internet is transforming more than just stockbroking, Stock brokers now offer on–line transactions at dramatic discounts and operate around–the–clock service and offer price comparisons on everything from insurance to credit cards. They charge commissions which are 30% below those charged by big banks. The result is that many traditional bank customers have online accounts. On an average, a customer transaction in a bank costs $1 while an Internet transaction costs just 1 cent. The result is that banks, wireless application providers are all fighting for the same thing : to take control of the customer relationship.

Now, banking transactions has been made possible over the mobile phone. One can bank anywhere and are not restricted to any location, or any specific time. Mobile banking, including paying bills and buying shares is being promoted and the Bank of Scotland has provided about 500 customers with mobile phones on which many have been checking balances almost daily.

It is estimated that some 4.5 million people across eight European markets used the Internet to do their banking by mid–2000 and the number is expected to go over 21 million by 2004.

Two factors are expected to fuel the growth of mobile banking :

1. the high penetration of mobile phones.

2. the projected explosion in Wireless Application Protocol (WAP) techonology.

By 2004 there will be 14 million WAP–enabled mobile banking customers for simple transactions.

Mobile banking will be to Internet banking what the ATM is to a bank's branch.

The Swiss giant Nestle is using the Internet to use comments made by the site's visitors to determine its market positioning. Also Volkswagen has been the first in Europe to sell cars and accessories onling. Besides Sweden's SE Banken is one of the world's fastetest growing onling banks.

In an industry where the relationship between the customer and a bank branch manager used to be sacred mobile banking can help fine–tine relationships with customers, even when they are far from a branch. This is because one can personalise the information to be presented over the mobile phone and send them advice about things which customers might like to do or buy.

Telecom Companies Initiatives

As more and more people are getting PCs, more business are taking the Internet seriously.

What is becoming evident is that the number of fixed telephone lines may eventually be less crucial as more and more people log on to the Web via mobile phones and cable and satellite TV.

Many telecommunication companies are going online with portals of their own which carry not only news but also subjects like chemistry and geography. Such portals provide services such as e–mail costing and Web design, and develope an e–commerce platform that allows retailers to set up online shops with secure transactions.

Indeed e–commerce has a bright future and a big shopping centers are in the cities, the small cities need to access these shops and the Internet is the easy way to do that. In the near future people will go to the e–city for shopping and prove that Internet is not just about pornography and recipes for making bombs but one can also do business over it.

Television which heretofore has bee a passive medium, one which encouraged viewers to sit back and relax, has been transformed by iTV which enquires interactive participation. What is more : the iTV will make it possible for televisions to communicate amongst themselves just as the computer do. Already France's CanalSat Jeux has introduced an adventure game to enable its 1.2 million subscribers to play the games.

The television is undergoing a metamorphose. It is becoming at the same time a computer. Soon one could send multimedia post cards and e–mail thanks to the infrared keyboard. Incoming messages could be read on television screen.

There is going to be a great boom in the mobile telephone business and in he businesses transaced online, while in 1993 there were 7 persons per 1000 of world population had mobile phones,there were 7% (or 400 millions)in 1999 and in 2003 there will be 853 mobile phones in use all over the world. Cut throat competition will because businesses will wish to grab a share of this big consumer market.

Interactive TV (iTV) and E-Commerce

In the near future the wonderful world of interactive television (iTV) will be unfolded and provide services that promise everything from interactive soap operas to personalised news and entertainment channels by combining TV with the Internet. iTV will come sooner than expected. The number of interactive set–top boxes–the VCR sized devices that receive and decode digital iTV signals–will increase.

iTV will generate e–commerce. There will be a big leap in the future between people with PC internet access and those who regularly use iTV.

In June, 1996 France became the first broadcaster in the world when it launched Television Par Satellite (TPS) to offer fully digital interactive services via the satellite. Later on Canal Satellite, its rival, followed suit. For monthly fees ranging from $ 15 to $46, plus $7 rental fee for the set–top box, TPS and Canal Satellite offer 2.3 million French households access to over 100 channels, up to 40 interactive services and several Internet portals through which viewers can help viewers can shop, bank, buy stock–or just watch. Some features are exclusive : TPSI for instance, provides TV e-mail between users, while only Canal Satellite allows viewers to compete against one another in interactive games.

The European Broadcasting Union removed a potential obstacle to the widespread use of iTV when its Digital Video Broadcasting Project adopted the multimedia Home Platform (MHP) software standard. This standardised interface for set top boss decoders and enables subscribers of one iTV provider to switch t another without the need for an entirely new installation.

The biggest unknown factor in iTV remains the consumer. People may well be reluctant to pay for something they are accustomed to getting free. So to succeed, iTV broadcasters would have to make access easy and convince viewers that the content they offer is worth the subscription fee.

Some predict that iTV will surpass the Internet as Europe's primary e–commerce platform by 2005.

T-banking is also going to become popular and more and more banks will offer it. People will then be able not only to check their accounts and pay bills but also arrange mortgages, life insurance and personal loans.

T-commerce is a marketeer's dream. When anyone subscribes to an iTV service his/her address, phone number and other personal details will be registered on a smart card in the set–top box. This data would become accessible to every firm from which the person requests information or buys a product, giving "marketers the knowledge of exactly who it i they are dealing with". The person could thus be targeted by companies for products they market.

One example of how techonology can change lives of people is Ennis town in Ireland. It has become Irland's Information Age Town. It became possible with a grant from the Ireland telecom company. The project residents huge discounts on hardware, slashed their Internet access rates, offered free computer training courses and handed subsidies to merchants and community groups to move some of their operations online. Now, a majority of homes in Ennis have computers and in the schools one in every seven students has a computer. Moreover, more than half of the towns business have an Internet presence.

The creation of the Information Age Town increased Ennis population by 12%.

At a time when experts are **warning that computers and the Internet encourage antisocial behaviour,** the people in Ennis have discovered the opposite : neighbours visiting each other to fix hard drives and scanners ; senior citizens meeting to play bridge on the Web.

Business–To–Business (B2B) Sites

The dotcom revolution is already starting to have a profound impact on the way trade and industry affect our world.

Thus more people are working form home, companies are using business–to–business (B2B) web–sites to coordinate their supply chain more effectively. There will be tremendous savings when more and more people work from home since they could always be in touch with their offices online instead of driving or using public transportation to reach there. Savings in time and travel and fuel.

Internet is, moreover, allowing a type of growth that uses energy and resources better.

Internet is also saving time for people and avoiding cost of heating and lighting stores and shops because people can shop online. Online retailers that employ nothing but warehouses have about eight times the number of sales per square foot of space used. According to OECD, the Interned could make 12.5% of retail space superfluous. That would save around $5 billion worth of energy every year.

Whether Newspapers

A study by the Boston Consulting Group says that the Internet will reduce worldwide demand for paper about 2.7 million tons a year by 2003, and this is going to happen despite the fact that we are actually using more paper in our offices than ever by millions of tons.

The shape of newspapers might also undergo change. As more and more people get on to the Internet they will access more online identities than mere paper thing.

In relation to books and newspapers the question that will arise is as to who will read them when everything is available, almost free, on flickering screens. Perhaps only the rich will read books and newspaper.

11

THE INTERNET THREAT

Pervasive Internet access is bound to affect our lives. More and more of the world's information will be accessible instantly and from virtually anywhere. The fact has to be faced that we will have traces about our doings on the computers and this information could become available to anyone seeking it–be it government or business survivals or individuals.

However, a positive thing might be that in an emergency our health records will be available for remote medical consultation with specialists and perhaps even remote surgery.

All this however poses the problem of privacy which will come at a premium. Enormous quantities of data about our daily affairs will flow across the Internet, working to make ourlives easier. Despite our penchant of giving up privacy in exchange for convenience, our experiences online may make us yearn for anonymity of the past. Methods would have to be found so that we could not leave trails of personal affairs on the Internet.

Security Deficit

Presently there is a great security deficit.

Making cyberspace safe is a growing concern because online crime has been on the increase and is growing fast. Online crime which includes everything from computer sabotage to industrial espionage to credit card fraud is notoriously difficult to trace. What is worse is that when companies are hit by fraud they choose to keep quiet about it.

Individual banks and business are being exposed to growing Internet crime in USA alone 6 million people have been victims on Internet fraud, an increase of 600% in 1998. People are being advised not to give their credit card numbers on the Internet since these could be illegally used by others. Certain internet even go to the extent of claiming reimbursement from the bank even though they themselves made the purchases.

The problem is that people can access not merely credit card numbers but also the respective secret codes. Certain crooks, cybercrooks, pick up the card receipt left behind by a customer and then use the card number to place an order online. Thus without a person's knowledge his/her card is used by another person.

What, however, is more troubling is that all information about a person using the Internet can be gathered : one tastes, one beliefs, one political opinions. This is because Internet spices on us. When one uses the Internet one leaves behind traces all over on the navigator, on the hard disc, on the sites one has visited or servers that provide data. Thus the Internet tends to encroach on ones privacy , not only the Govemment but business and unfair individuals can access personal information and data about citizens.

In offices the bosses can spy on their employees computers. It is estimated that one–third of the top bosses in big enterprises have their employees correspondence under electronic surveillance by using software that traces each time a server is used.

Thus, in USA employers found that their employees spend 50% of their time on Web by accessing the erotic Penthouse site.

On the Net one can find about whether a person visits porno sites, whether he is a dissident or what associations or organisations he/she belongs to. In fact Internet poses a threat to a citizens fundamental rights.

Cybercrooks and Spies Viruses

People who create the virus : techonological nuisances may have three types of motivations :

1. To be noticed and to prove that they are stronger than the systems of in–built defence introduced by business. In fact to prove that the security systems are not impermeable.

2. To create a virus with criminal intention. Thus there may be employees dissatisfied with their lot and would wish to take a revenge upon their employers.
3. Computer terrorists who create a virus to claim a ransom or those who would just take sadistic pleasure in destroying a system which embraces the whole globe.

These Cybercrooks can be caught thought it is difficult to trace them. Online sabotage of computers and information networks is a particular favorite to today's hackers who have used programmes like viruses, bugs, worms and Trojan horses or I Love You methods for causing damage. Within a few hours the aggressive I–Love-You virus let loose on the Net by three Filipino hackers wrecked havoc with millions of computers, causing losses of some $ 10 billion.

Spies are also making good use of the Web. Industrial espionage has increased considerably since the advent of the Internet and it is so much easier to steal information by sneaking into a computer network than by physically entering a premises.

Crooks of the future will be after more than just credit car numbers : they will be after your personal identity. Crooks can easily hack into e–mails to pass themselves off online to another person – with intimate knowledge of everything from secret grudges to embarrassing illnesses.

To deal with cybercrooks, spies and hackers many countries (Germany) have their own Internet Patrol teams that monitor the Net around the clock for illegal activities. Britain is setting up a cybersquad though a computer crimes unit already functions from Scotland Yard.

With concern over computer viruses and electronic terrorism high a strategy to fight hackers with hackers has evolved. Thus, a renowned group of Boston–area hackers known as LOpht was acquired by a computer security firm called @ Stake. LOpht claimed that they could shut down the Internet in 30 minutes. Even the Justice Department and the Securities and Exchange Commission have hired LOpht as consultants.

Coordination to Combat Crime

What is important is that in the future their should be international coordination of law enforcement agencies and countries need to define carefully what constitutes cybercrime so that the cybercrooks who regards the marketable data on the Web as low–hanging fruit, could be dealt with effectively.

Yet another problem to be faced is that of copyrights on the one hand and of tax assessments on Internet generated incomes. The Napster programme in the US allows anybody to copy any type music. Recording companies according filed suits. And since Internet crosses national boundaries the main concern is which country should impose tax on the incomes generated and how to detect the producers and the users.

It goes without saying that consumers will be reluctant to engage in electronic commerce without privacy guarantees. Internet companies do realise that they must find ways to build at least some privacy protection into their techonology and to allow users to be informed of website privacy practices and control what information they give out. But putting the entire burden for privacy protection on the technology overlooks the economic realities of the Internet and could result in Balkanisation of e–commerce.

According to an OECD policy paper on data privacy techonology cannot replace legal solutions to data privacy such as contracts and regulations by law.

Copyright

Transmission through electronic networks raises **problems in the field of copyright and neighbouring rights (of performers and producers of phonograms)** and it is widely recognised that international cooperation and coordination is necessary to solve them.

The World Intellectual Property Organisation (WIPO) has adopted a new WIPO Copyright Treaty (WCT) and WPO Performances and Phonograms Treaty (WPP). The solution proposed by these treaties was to extend the existing right of 'communication to the public' to digital networks transmission since the latter make the protected subject matters available to the public in such a way that members of the public may access from a place and at a time individually chosen by them (Article 8 of the WCT and Article 10 of the WPPT).

The above treaties also aim to provide additional protection for copyright owners in the digital environment by sanctioning the abuse of technological copyright protection measures, such as hardware locks or other encryption merchanisms. Sanctions are also provided against any deliberate tampering with 'rights management information', the ownership data which may accompany digital works.

The challenge for policy makers in this field has been the preservation of an appropriate balance between the rights of owners, and the public interest in the free circulation of information. There has been criticism particularly from developing countries, the enhanced copyright protection inhibits equitable participation in the information society because it further increases the cost of accessing content and applications. It is also important that international copyright agreements do not conflict with the more general principle of freedom of expression which is guaranteed in the Universal Declaration of Human Rights and Fundamental Freedoms and irrelevant conventions.

The 1996 WIPO Diplomatic Conference in Geneva recognised in the preamble to the treaties of the importance of this balance. Copyright law is not merely a legal means to protect the rights of copyright owners ; it is directly concerned with the wider goals of enhancing education, science and culture.

Developments in information and communication technologies are promising and delivering new opportunities for the exchange of ideas and access to information. They also enhance significantly democratic processes by promoting freedom of expression, interaction and information sharing.

The benefits derived from the new media will largely depend on the ability of individuals to access the technologies and approaches to the governance of networked environments.

12

GLOBALISATION AND CULTURE

Technology is everywhere, inseparable from our humanity. But no longer we can look at technology as something apart because it is now affecting our values and habits.

The nation, the family, work, tradition, nature, are not at all the same as in the past. They are institutions that have become inadequate to tasks the are called upon to perform. Today because globalisation is no longer incidental to our lives today, it is the way we now live.

Instant Technology

Instant technology of communication–24 hours a day–is at the core of a truly global revolution. It has erased national boundaries, is breaking old family bond and is changing for ever the way live. If one were to learn about traditional pastimes, today one will be shocked because instead of story telling people will be watching television serials. All this because we are adding more modern paraphernalia (radio, TVs, videos) in our homes.

Impact of Globalisation

We have been introduced to globalisation. Not only is globalisation very real, its consequences as well can be felt everywhere. Thus the global marketplace is indifferent to national borders and national sovereignty tend to be characteristic just a notion.

Globalisation in many respects is not only new, it is revolutionary, it is economic, political, cultural and has been influenced by the development of communication systems.

Globalisation is not only about what is out there, remote and far away from the individual ; it is an in–here phenomenon too, influencing intimate personal aspects of our lives. Traditional family systems in many parts of the world care under strain specially as women claim to greater equality.

Globalisation is a complex set of processes. It is not only pulling in outside influences in local societies but is also taking from them. It is thus enriching.

Globalisation is creating a world of winners and losers. The share of the poorest of the world's population in global income has dropped from 2.3 percent to 1.4 percent over the past 10 years. The proportion taken by the richest fifth, on the other hand, has risen. Global village is thus tending to become global pillage.

It took about 120 years from Alexander Graham Bell's invention of the conventional telephone to wire up a billion worldwide. Current estimates by mobile operators suggest the same number of mobile subscribers could be online by the year 2005.

The Internet has often been regarded as America's Trojan Horse as also the Infernal machine.

Globalisation as generated by Internet is introducing a new way of life and is slowly accelerating a cultural revolution.

Internet is changing the manner in which one informs himself, one learns, one relaxes, or works. However, such is the case at personal level but at the level of commerce, the Internet shows slower usage.

Role Needs Elucidation

Though Internet without doubt personalities an economic revolution, and a revolution of communication and media be its role in the fields of education, culture, of society needs to be elucidated. Its and steps taken to deal what may be its social fallout. Immense progress or deplorable regression ; a machine to manufacture individualists or the generator of social links ; a herald of liberty of choice or subjugation to powerful merchants ; a superb instrument of acculturation or a gigantic agent of disintegation.

Heretofore traditional culture was communicated through word of mouth, interpersonal interaction and through reading and writing. However, the modern technological revolution has brought the images and pictures in the forefront. Images are the victory of sensations over intelligence because they are fleeting, immediate and convey emotions.

It is high time for educational systems on the one hand and parents on the other to try to establish complementarily between the media exposure of the younger generation and their reading and writing.

Impact on Youth

Personal touch in education cannot be disapeared with through interactive media can contribute a lot to education by bringing the students face to face with historical events and happenings thus giving priority to the visible rather than the invisible of sensation over reflection, to appearances rather than depth. Similarly for language learning, there are wonderful softwares available but there is no substitute to learning face to face with another person for then one is communicates not merely words but also the inner meanings and their vibrations the carry.

Historically culture has been linked to the language, customs, beliefs of the ancestral village. But convergent technologies are changing all that and Marshall McLuhan's "global village" children are spending their formative years immersed in them seismic shift in human communication has concerned and a linked by mass communications and multimedia networks the world's technologically enabled youth are forging their shared affinities into a fledgling global culture. Thus, games are played, romances bloom, business are launched and almost every human interaction that can happen in a school, office, factory, cafe or street corner is also talking place on the Internet.

Influence on Businesses

Technology enables business and the society to evolve in the coming years business will experience great changes. The convergence of numeric technologies (the computer, the electronic messagerie, Internet and the new personal numeric gadgets) will brig about fundamental and irrevocable changes and to electronic commerce, will being the buyers and sellers who would otherwise never met.

Once the preserve of business users, mobile phones have become an every day consumer appliance, even a fashion accessory. The marriage of pre-paid calling cards and cheap mobile phones has taken the market in Italy, Ireland and Portugal by storm, growing nearly 385% a year because there is no subscription fee or phone bill at he end of the month.

Behavioural Change

Individuals in their daily lives will also see the effects of this numeric revolution and mainly in the way that people work. This change will be brought about by a new generation of smart devices ranging from mobile phones that receive e–mail, surf the Internet and even pay for transactions, to hot computers that go online automatically.

The smart phone era has already dawned. Thus Nokia's 9110 Communicator is capable to composing faxes, sending and reading e–mail, even surfing on the Net. On the other hand Alcatel is marketing a phone called the One Touch Com which has taken all the functions of a palm–sized organiser, such as address book and scheduler, and installed them in a handset small enough to slip in a pocket.

The quest now is to make satellite phones a practical, popular means of 21 century communications. As with almost everything else these days, the most promising future growth area for the low–orbit satellite phone market will be the Internet. If the Net keeps expanding at it current pace, the demand for digital connections will skyrocket.

Mobile communications techonologies will make the cellular phone a powerful interactive tool to be used by individuals in these daily level. Conversation will just be one of its many attributes ; a built–in camera will add full–motion videos to the discussions. Differing languages will cease to be a communication barrier since with an automatic interpretation function one will be able to talk freely with almost anyone in the world.

In Belgium Lernout & Hauspie have been able to create technology called NAK that can recognise upto 34 world languages and translate simultaneously. Their computer can recognise voice messages, display them on computer screen in words perfect grammatically.

At the Finish capital's airport, a Coke machine has a mobile number instead of a coin slot–dial, walk up to the machine and a Coke drops out, the charge appearing on your phone bill. There is also a car wash you can operate without leaving your car : dial 1 for wax and 2 for no wax.

In Germany, Deutsche Telekom's DI service allows motorists to call in with a destination, then a computer–generated voice call back every 15 minutes with traffic information. In Italy, operator Omnitel let, users call a special number while standing in front of designated pizzerias ; the computer then figures out where you are and plays back a brief guide in one of five languages.

It is already possible in most European countries to subscribe to services that will send soccer scores and stock prices to your mobile using short messaging much like a pager. The technology is close to achieving the Holy Grail of the advertising industry ; an audience of one. For example, an advertiser like McDonald's will soon be able to send a data message to every mobile phone at a football stadium urging their owners to eat a Big Mac at half time.Or a pedestrian walking past a car showroom might receive a message inviting him inside for a deal.

Synergy Between Man and Machine

How far will techonology which is revolutionising communications go apart from letting us communicate with one another.Yes, researchers are now trying to create synergy and empathy between man and machine so that the machines, the PC, the mobile, etc. can not only receive and understand our language but also the subtle physical messages we send and receive without knowing it.

When two people face one another and talk they are not only using language but also transmitting singnals through gestures and postures, by the nuances of facial muscles, the eye and brow movements. The words they utter normally would generally travel at the speed of 1200 miles kilometers per hour and soon the PC on the mobile phone will be able to communicate feelings and emotions to- and long distances without embraces, handshales.

Societies have even gone to the extent of regulating social behaviour. At times there have been laws against it established a personal relationship. Only the fascist salute was considered proper, for it demonstrated subservicence to Il Duce ... Skin contact such as that takes place during a handshake, is actually one of the most efficient ways to transmits colds and viruses.

Cultural antrhopoligists have noted that in many cultures thee are three successive levels of culinary intimacy :

(a) we easily share cool liquids with people we barely know ;

(b) we need to be more intimated to share warm liquids ; and

(c) we need to be very intimate indeed to share warm solids–possibly because they take longest to prepare.

Sales managers knew that:

(a) The right side bias–possibly due to the right arm being stronger in most people– is one of our deepest shopping reflexes, and the reason why store owners often position their most overpriced or hard–to–move goods on the right as customers enter the store.

(b) People hurry up when they find themselves in narrow aisles, but slow down for a leisurely browse in wider aisels. If something is spread on a table, one is especially likely to pause and touch it.

Frequent vocal shifts reveal the maximum lack of confidence.

What couples say in relaxed after–dinner conversations are specially revealing about their future. When social psychologists interviewed couples at four year intervals, they found that one of the best predictors of whether the marriage would last was simply if the coupled tended to say "we" rather than "I" when talking about how they first met me. Almost as significant was whether they agreed with each other on how many times they had done things–like hold hands or share a meal in past week. Couples that did not agree had a higher divorce rate.

Challenge of Pronography

It is said that the NET is the natural medium for adult content and has become the instrument of spreading poronography. Nowadays what sells better on the Net is sex and the initial public offerings of NET companies. Numerous cybermail of adult web sites exist and have minted money in a bizarre array of pay–per view Web events. The web porno business is flourishing and some of the companies are now even going to be listed on the stock exchanges. The NET being open to everybody poses a challenge to favourments and several and cultural organisation to restrict access to proper sites on the NET.

13

SHAPE OF THINGS TO COME

A Peep into Future Technologies

The present exciting prevailing technological changes will soon be overtaken and there are signs of the beginning of an accelerated phase in the evolution of the media. The changes portended are :

1. People will de–link from their personal computers ;

2. Innovations which will decentralise the access to new forms of digitally–encoded media content, away from personal computer, may be introduced;

3. "Set–top–boxes" and devices which cannot to the television set, radio receivers, automobiles, and telephone handsets, which will permit ready access to new media content, will be developed and sold in the market ;

4. Keyboard and mouse–two devices which many consumers find difficult to use may be replaced by voice–activated control devices or greatly simplified key–pads or remote control units;

5. Software, which acts as the interface between users and media–accessing devices, will be further refined so as to become truly user–friendly and stable so as to allow increased access to new media products;

6. The presently smallest device–the palm–top will–yield place to wearable devices, which may resemble present–day watches. They may be the ideal instruments for accessing financial information services, travel, and leisure guides, weather reports, and e–mail connections. Such wearable devices present a myriad of possibilities

when connection with global cellular connecting being provided by telecommunications companies ;

7. The vision of gathering all human knowledge together in one place in libraries and encyclopedias will become a reality ; the aim being to achieve a total overview of the recorded knowledge, as with the Universal Decimal Classification System or by means of one large computer. Recently due to the growth of the Internet, this vision has manifested itself once again the form of "the library without walls", or the "Virtual Library" – the digital library. One will be able to get instant access to all recorded information in the world through the nearest such library. One of the most important items in the digital library is **metadata.** Which describe the content and attributes of the library collection. They are important to the process of searching among millions of documents. The most prominent example here is the so– called "Dublin Core" which defines fifteen coe areas to be used by authors as well as intermediaries; and

8. The Internet is not the virtual library, but constitutes an important part of it. In the library environment a slogan during recent years has been "from collection to connection".

The Intelligent Television

Television which heretofore has been a passive medium, one which encouraged viewers o sit back and relax, has been transformed by iTV which requires interactiv participation. What is more: the iTV will make it possible for televisions to communicate amongst themselves just as the computers do. Already France's Canalsat Jeux has introduced an adventure game to enable its 1.2 million subscribers to play the games.

The television is undergoing a meamorphose. It is becoming at the same time a a computer. Soon one could send multimedia post cards and e-mails thanks to the infrared keyboard, Incoming messages could be read on television screen.

The day is not far off when consumers will be able to use their TVs too do everything from ordering pizza to buying stocks to checking out new cars. The advances in TV are so rapid that we have to change the way we think about our TV sets. One philips product AMBI transmits PC software applications and Internet access to any TV sets, creating a second desktop for families with a single set. Another of Philips

Personal TV, lets viewers pause, rewind or instant–replay live broadcasts. A third product, Internet TV, gives families without a computer their first ramp on to the information superhighways.

Affective and Neural Computers

The day is not far off when there would be computers which would respond to one's emotions–computers which will be able to respond to one's body language. The personal computers of tomorrow will demand more of our attention and our time.

Affective computing involves endowing computers with the ability to recognise, respond to and in some cases even display human emotions. This is based on the premise that you had better understand a person's moods, likes, dislikes, and idiosyncracies if you want to communicate.

The computers of today which lack emotional intelligence and it is now being realised that if emotions are important for human communication, then they are important for human–computer communication.

At the Massachusetts Institute of Technology researchers are developing new software for reacting to the user's emotional state with a judicious mix of empathy, contribution and helpful advice.

Though computers can do a good job of frustrating people, they can also actively help people reduce their frustration level.

The affective computer will react the same way as people do : by looking and listening. Affective computers are outfitted with electronic senses : video cameras watch gestures and facial expressions, speech recognitions, and a network of bio–sensors–unobstructed and lightweight "wearable" computers that are embedded in everything from clothing to jewellery–keep track of physiological signals like pulse, respiration and skin conductivity.

Physiological changes are a reliable guide to a person's emotional state. Dilated pupils, for example, are a clear indication of arousal and interest, as is a quickening pulse or depression while slumped shoulders mean dejection. The computer, which through its network of bio–sensors is literally in constant "touch" with the use, picks up on this information and thereby infer how a person is feeling. Affective computers get to know their users by observing and responding to emotions.

Affective computers try to perceive what you like or dislike and make suggestions on that basis. The computer takes the initiative to communicate with you. It tunes itself into your preferences instead of expecting you to programme it.

Affective computer application follows the theory that while the eyes may be the windows to the soul, the eyebrows are the peepholes to the emotions. Everyone knows raised eyebrows indicate astonishment or delight, while a furrowed brow suggest anger or confusion.

Neural Computers

While some people might react with consternation to the possibility of an emotionally computer, it has to be realised that the computers do not need emotional abilities or the fanciful goal of becoming human, but for a more practical goal : to function with intelligence and sensitivity towards humans.

Apart from affective computers the vision is that before the end of the 21st century man will be all to create highly detailed maps of the pertinent features of the neurons, neural connections and synapses in the human brain including all the neural details that play a role in the behaviour and functionary of the brain–and to re–create these designs in suitably advanced neural computers. By that time, computers will greatly exceed the basic computational power of the human brain. The result will be machines that combine the complex and rich skills of humans with the speed, accuracy and knowledge–sharing ability that machines excel in. The techonology will enable us to have virtual–reality experiences with other people and have any type of experience with anyone–business, social, romantic, sexual–without have to be in the same place.

Wearable Computers

The time is coming for wearable computer which will have a dozen Internet connected devices sewan into the clothing as well as glasses fitted with small video screens. Computers will be literally woven into the fabric of ones life.

These computers are small, lightweight, portal devices that are carried or worn by the user and are normally devoted to a single function. These wearables can provide everything from Internet access to augmented perception at all times. Wearing these devices transforms a person into a **CYBORG.**

Flexible electronic circuits are also seen into specially designed clothing, including a "vibravest" studded with radio transceivers that vibrates to alert to the approach of a distant object. A handled joystick and keyboard fit into the pocket. A cell phone, pager, daily planner, comcorder and high–resolution still camera, are part of this portable package.

Thought Operated Devices and Telepathy Through the Internet

A silicon chip can be implanted into a persons's body (forearm for example) so as to be able to interact with a number of electrical device.

Humans and machines can work together, combining the best features of both, but if a person can communicate with a computer through an implanted silicon chip, why not with another person.

Prof. Warwick of Reading University in UK is professor of cybernetics. He had the chip implanted in the arm and now proposed that his wife also have the implant. Thus, two nervous systems will be linked via the internet. This time corresponding computer chips, about the size of a postage stamp will be surgically connected to nerve endings in the couple's arms and will send and receive complementary radio signals. Warwick's chips will pick the electrical nerve impulses and transmit them over the Internet to the corresponding arm of his wife's arm. If this digital mind reading works, the ultimate application will be "telepathy through the Internet".

Researchers in Europe, USA and Japan are exploring ways to wire computers directly into human brains. Thus not only could telepathic e–mail be sent, it could enable people to operate computers and mobile phones by thought alone, a and restore some functions to patients suffering fro neurodegenerative disorders. In experiments brain implants given to disabled individuals enabled them to control computer cursor simply by imaging the movement of various part of their bodies. This has given birth to a **Thought Translation Device.**

Flying Jets by Thought Power

In Britain the researchers at the British government defence evaluation and research agency (Dera) a similar technique is being used to help fighter.

DERA's "congnitive cockpit" research program is intended to give pilots the ability to control key flight systems simply by looking at or thinking about the appropriate icons on a computer screen... This technology will not only permit hands–free operation of crucial functions but also give pilots quicker response times during complex and often dangerous manoeuvres...

The technologies like DERA's cognitive cockpit and Birbaumer's thought translation device hold forth the prospect of an ever–closer union between ourselves and our computers. Should this techonology become common place, it will not be the keyboard or the mouse, but the thought that counts.

Virtual Reality in the Real World

Cybersociologists have been wondering what would be the affect of long term exposure to 3–D fantasy world. There are so many computer generated lies in which we lose the ability to differentiate between VR (virtual reality) and real life (RL). As more and more industries turn to VR for prototyping, training, and marketing, the greater the incentive to invest time and money in improving VR's technical performance.

The most significant change in recent years has been the development of multiuser projection based VR pioneered by University of Illionis, Chicago, The Cave Virtual Reality Theater was introduced, a light–tight room onto whose walls, ceiling and the floor computer generated images can be projected. The current aim is to extend the CAVE's potential through VR tele–immersion using software that lets people collaborate over distance–when scientists and researchers want to work remotely but share the same models.

Another highly shareable form of VR follows from the arrival of VRML (virtual reality modelling language), a programming language that brings 3–D to the Web and requires no extra hardware. All those needed is a free plug–in added to the regular Web browser to open up a world of interactive virtual neighbourhods and look–alike avatars–that one can programme oneself.

Virtual reality as presented in video games posing a behavioural challenge specially for the young. These games are interactive in that the player himself/herself becomes part of the scene and has to kill or be killed. There are brutal scenes Previously what these games presented was the killing of small animals but now the games involve fighting the extraterrestrialsl to be overpowered by them or to annihilate them. The violent images, sociologists believe, can leave an imprint on a child's mind.

Computer–Bugged Environment

The day is not far off when a single hand–held pocket–sized device would be connected to walls, into a car, to other devices, far and near and fitted with sensor. In effect if one calls a friend far away in another city and he/she is not in, the call will be directed to where the person is : in the car, at home, in a restaurant, or having a walk outside in the lawns. Familiar with our voices, our whereabouts and our habits, these new machines will be everywhere and for everyone. The idea is not to connect us to the cyberworld but to bring the cyberworld right into where we belong.

The device, OXYGEN works something like this : a single pocket–sized device dubbed HANDY 21 changes from wireless phone or handheld computer into tiny TV or two–way radio, downloading small bit of software as it needs them HANDY 21 may come with built–in goodies such as a camera, satellite locator and infrared sensors. There is no keyboard, e–mail ; phone calls and the rest are driven by human speech.

The picture will further evolve with the advent of the third generation of mobile phones : a veritable multimedia tool which will at once be a computer, a television, play station and even a terminal for making payments electronically. Such a device will enable a person to send e–mails, shop and register and play music. And with the microcamera that it has one could vision conference.

Digitising Smell

There is no dearth of innovation. May be, now that work is already on, twenty years hence it will be possible to produce televisions which will be able to help one smell and see cooking lessons over the televisions or experience the odours when street scenes are being telecast.

To See and Be Seen

By 2002 there will be over nine million Internet cameras. In addition digital cameras and videos and teleconferencing and televisioning equipment will give us a peep into the future and even now people are being enabled to show themselves to a vast international audience. While on the one hand pornography on the Net is a matter of concern worldwide, on the other wireless techonology is making it possible for people to see one another on the TV or handheld phones. In addition, apart from e–mail, video–mail will enable people to transmit photographs which could be seen at the other end of the world by friends and relatives.

Personal Digital Assistant

The PAD is a symbol of modernity and a technological marvel. Already in 1998 there were 4 million users around users around the world. The Palm Pilot is actually a personal digital assistant. It does not have a keyboard. It is sufficient to write on the screen in a graffiti alphabet which can be mastered by anyone in a short while. One PAD can communicate to another one as also be connected to the computer.

Cyberclients to Call the Tune

Power unto cyberclients ! The mere fact that sellers or produces advertised their products online made millions of surfers aware of the fact that the price tags were 13% less than those prevailing in the market. This led consumer–surfers to haggle over the price and indicate the price acceptable. And the third development has been that the consumer posts the price he/she is willing to pay and the advertiser could come back to indicate whether, in view of the increased demand, the price is acceptable.

The Internet is soon becoming, and will continue to be so, the place to shop at the best price possible. Already people can find comparative prices for the same commodity or service available at different places. But now some sites are offering specific quality goods at a specific price on-line and indicating to the surfers that the ultimate price will depend on the number of orders registered, i.e., more the demand for the article9s), the lesser the price to pay. Air tour operators are doing the same. It is estimated that the internauts pay almost 55% less while purchasing online than they would have otherwise paid over the counter.

In the Interest of the People

The Internet is becoming the battle ground for supremacy amongst service providers. There is battle not only about money or personal clout but mainly about empowering the consumers : to give ordinary people for less. Strategies are afoot to target the bottom of the personal income pyramid instead of the middle or top.

A recent study by the OECD on the pricing of the broadband services for consumers in the US, Japan and many European countries shows the average monthly cost for digital subscriber line connections is \$60.80 and \$ 44.80 for cable modem service–anywhere from two to three times the target of \$20 set by a Swedish Internet entrepreneur–B2 (or Bredbandsbolaget) The B2 view is that the copper wire networks from scratch, one that allows faster and cheaper connections to the Internet–without the need for modems. The Swedish Government and B2 plan to wire 70 Swedish cities through high–speed fiber optic network that would allow business to rent "raw" fiber optics–fibre which is not connected to a traditional phone company network, and run any type of service over it. By the end of 2000 B2 plans to connect 100,000 housing units in Sweden and the eventual goal is to connect 50 million households in Europe over the next five to seven years.

Residential Gateways

Some years ago there are not many devices, besides PCs that can make use of the Internet but now consumer–electronics firms and appliance manufacturers are showing off Web–enabled phones, radios and refrigerators. The move is now on to have devices that establish a high–speed link not just to computers but to any appliance that can send and receive data. Such "residential gateways" create a home network that turns every phone jact into a fast, always on connection to the Internet.

Cisco Systems Inc. of San Jose plans with Whirpool to jointly build networked appliances such as washing machines that can automatically detect mechanical problems and summon a repairman. Panasonic has already demonstrated a prototype of a "Virtual Chef" microwave that can download recipes and cooking instructions from the Web.

The interest in residential gate–ways has been driven by two trends : the emergence of consumer–priced high–speed Internet services over phone and cable networks, and the development of home–networking technologies that require no new wires.

The new high–speed modems provide an Internet connection with seven to 30 times the capacity of the speediest dial–up modem, making it possible for multiple computers and other devices to hook into the Web simultaneously.

The home–networking technologies, which are still being refind, use existing phone lines, wireless links or power lines to connect devices, eliminating the burden of stringing new wires through walls.

While the main appeal of home networks has been for families eager to hook two or three PCs to the Web, the residential gateways being developed by Cisco, 2 Wire and other companies aim to push Internet–based applications and services more broadly around the home.

The gateways will play two important roles in home networks :

1. They will take a high–speed signal from a cable network or phone company "digital subscriber tune" and translate into a signal that devices on the home network can understand, using the emering home–networking standards.

2. They will act as a sort of electronic traffic cop, directing data between devices in the home and sites on the Web.

The gateways will also be deployed that would set up multiple phone lines on a single digital subscriber line. AT&T Corp. would soon provide gateways that deliver both phone and Internet services to homes.

The home focused technologies will enable one to use office PC to monitor the child at home and even video–conference with ones relatives, near and dear ones. Such Egg–like devices may act as monitoring system so we could see what is happening at home. Dishwashers will e–mail their owners when their filters are clogged and repairment will diganose washing machine troubles online.

In the near future for a little extra payment manufacturers could put in a chip inside applicances that would allow them to talk to other devices and connect to the Internet.

Asymmetric Digital Subscriber Line (A.D.S.L.)

About 20 different telecommunications companies across Europe are testing a technology known as ADSI (asymmetric digital subscriber line) which permits rapid transmission of big stackes of data over ordinary copper phone lines. ADSL is designed for teleworkers and businesses who cannot effort to wait for a connection to the Internet.

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THE GREAT INFORMATION DIVIDE

For the world's economic, social and cultural benefit it would be nice if all the villages in all countries could be connected to one another by one another by our telecommunications technology.

Haves and Have–Nots

This man remain in an ideal because the 1999 Human Development Report issued by the United Nations asserts that i information technology is actually widening the gap between the world's haves and have–nots, not narrowing it.

There are more Internet account holders in London than in the whole of Africa. About 80% of the world's population has no access to reliable telecommunications and about one–third has no access to electricity. And more than half the population in low–income countries illiterate, with a far greater proportion unable to read English, the main language on the World Wide Web.

The consequences of technology lag are serious because, ver decade, 30% of the world's economic growth and 40% of new employment will be driven by information technology. More than half of the GDP in the major OECD countries is now knowledge based.

The United Nations report notes that buying a personal computer costs the average US citizen about a month's pay, compared to eight years' worth of wages for a citizen of Bangladesh.

Adapting to World's Poorest

In its report on the Information Divide the UN argues that more innovation is needed to adapt technology to the needs of the world's poorest and remotest regions. High on the priority list are personal computers powered by solar strips or wind–up drives that are resistant to sand and humidity ; software for touch screen to allow usage by a wider audience, and prepaid chip card software for electronic commerce.

But who will pay for this new technology ? One idea suggested in the Human Development Report is a technology tax based not he number of bits in every electronic communication, a proposal that is being hotly contested by the US Government.

The Digital Divide

The Internet has created a digital divide, with some poor nations watching from as far as the World Wide Web transforms commerce and creates vast new sources of wealth in the developed countries.

The World Bank's International Finance Corp. unit has joined with Softbank Corp. of Japan to create a $200 million fund that will finance Internet start-ups in 100 developing countries.

International Finance will also join Softbank's existing plan to invest $ 300 million in Internet companies in China and Latin America, bringing the total amount they are devoting to Third World Internet development to $ 500 million.

Softbank is one of the most successful backers of Internet business in United States. It has provided see capital to Yahoo Inc., E* Trade Group Inc. and Buy.com Inc., among others.

The new ventures, Softbank Emerging Martkets, will provide see d capital to entrepreneurs building Internet business in poor countries. It will also seek to to transfer successful electronic e-commerce business models and train managers to apply them.

"The digital divide is one of the greatest impediments to development, and it is growing exponentially", the World Bank president James Wolfensohn, said, "We are taking a lead in the effort to close the gap. This investment will accelerate the inclusion of the devloping countries in the information revolution.

Internet Contribution

While the Internet has created the great digital divide one of its contributions has been to give power to the people in that they can freely and without hinderance access whatever information, knowledge they need.

Yet other contributions have been :

(a) employees and the consumers now hold real power ;

(b) the traditional bosses are nearing extinction ;

(c) a new age has been ushered in where time and talent are the most precious commodities ;

(d) hierarchical corporations are passe ;

(e) nation states are increasingly superfluous ; and

(f) lifelong careers are rare.

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TRAINING FORTHE CYBERAGE

The advent of the e–revolution, of cyberage has been made possible by some outstanding people who are now form its elite. The speed with which Internet is expanding around the world poses the question whether there are enough people who understand the techonology, its social and economic implications, and have the ability to manage the new type of businesses it has generated and to face the challenges of globalisation and the fast paced e–commerce realm.

What will needed in the near future are cuber managers and cyberexecutives, and cyberentrepreneurs.

The information technology is transforming the ways of how people work. The European Commission has estimated that half a million jobs will be created for the network society by 2002 and the US Department of Commerce estimates that nearly half of the American workforce will be labouring for information technology producers or heavy users by 2006.

International trading firms increasing and are some to develop a global electronic commerce network. The will need trained people able to handle new technologies and their implications.

Management Literacy

Future managers or leaders will need to understand how the Net and e–commerce will change customer and consumer relationships. This new management literacy has to favoured emerge graduates have for the wired world. Also new ways need to be developed of using the Net to teach students and create learning environments around the Net.

Cyber Managers

Operating in a new networked economy is becoming a basic skill for general managers. Where executives used to communicate via memos and presentations, they now must work over a constantly update online presence. This means they have to understand how to use the Web to communicate, in real tie, to a global audience, how to draw that audience, make it easy for them to find what they meant, and let the interact and they have to development and know. The challenge for the future managers or cyberexucutives in e–commerce is different than in traditional busineses : mindset and values, and leave just the decision–to–action cycle time and processes key to making it. The future generation of cyberexecutives would need not more technical prowess but a new line of strategic thinking, the ability to learn quickly, and managerial skills to work in a networked organisation.

Challange to Managers

Accordingly, while the cuber -revolution will ultimately make voice, video and data services available anywhere, anytime, business will need people to manage databases, networks and network traffic, carriers and service providers, virtual corporations and teleworkers.

And since the cyber executives would also have to be prepared to deal with issue generated by online computers, e.g. like privacy, e-learning, reliability and invoicing.

While a team breed of cyber executive will main business of care corrections the e-revolution will also people for more and more graudates to join fast-moving small business or start their own seek careers in big business houses.

Investment in Training for Cyber Executives

Clearly, there is a need of new breed to cybermanagers. Their training and orientation has perforce to start form the schools to the universitites and to post–graduate management training institutions.

Globalisation has made it incumbent on the training institutions to orient the next generation of students in international finance and industry analysis and marketing besides core courses in quantitative methods, economics, business administration, law and politics.

To create a new breed of cybermanager and cyberexecutives what is needed is investment in training programmes. Already shortfalls in investment for training are the order of the day. E–commerce training is no exception. To create an army of e–wise entrepreneurial managers, Governments apart, it is companies that must start investing both time and money in training staff and integrating their e–commerce initiatives with customer relationship management.

ANNEXURE 1

COMMUNICATION MEDIA, DEVELOPMENT AND SOCIAL CHANGE

Planning, development and utilisation of communicating media for development and social change programmes calls for an intimate understanding of :

1. Social and Cultural factors.

2. Psychological factors.

3. Accessibility of services, facilities which the programme purports to develop or provide.

Human Communication Process

In addition to the above factors those incharge of development and social communication have to have an understanding of the human communication process them in purpose of which is to get a message across from the sender to the receiver. Also needed is a realisation of the fact that among human beings the communication process works within a social environment that determines the generic experiences of the sender and the receiver. For effective communication also essential is an understanding of the specific experience of the sender and the receiver.

Since *communication activity in inter–personal, group, community and mass situations* can be complex, the following key questions may help as a communication situation and improve the communication process and programmes :

1. What is the situation and environment in which the programme, for which the communication is being planned, has been initiated or operates ?

2. What are the overall programme objectives and the specific objectives which require communication support ?
3. What are the communication objectives ?
4. What is the target audience ?
5. What is the receiver's profile in terms of his/her behaviour, needs, and motivations ? What are his/her attitudes and values ? What is his/her frame of mind or experience ?
6. What can be the content of the message ? How can it be positioned?
7. How to organise and manage the reach for (a) mass awareness, (b) community participation, (c) group discussion, and (d) inter–personal dialogue.
8. What should be the time and timing of sending the message ?
9. What should be the place to give the message, what should be its placing ?
10. What are the possible consequences of a message ? What are the contigency options available ?
11. What are the costs of various options ?
12. What is the amount of change intended ? Since, the amount of change in practice is more important than the amount of information or awareness gained, how can the amount of change be measured ?
13. How to use the feedback for continuously improving the communication programme ?
14. How to create an organisation for the communication programme and how to manage it ?

Sources of Motivation

Apart from the above the media planners and programmers dealing with development and social change aspects have to be aware of the sources of human motivation based upon the following five hierarchies of the needs–motives :

1. *Psysiological needs or survival needs or biological (needs)* which are the lowest level of needs whose fulfillment is most important in the preservation of life, e.g. air, water, rest, physical comfort,

protection, sex and exercise. When the needs for survival are catered for, they no longer represent a dominant influence in a man's behaviour and hence the needs at the next higher level come to the force.

2. *Safety needs* are needs for protection against elements of danger.
3. *Belonging needs also known as social needs or love needs* which have been manifest themselves after safety needs have been adequately fulfilled and no longer motivate behaviour. To satisfy this need for belonging a person usually strives to adjust one's own behaviour to meet the standards of the group one belongs to. Media have to create the climate that would provide for the fulfillment of this need so that the people could work as a team, take pride in group performance and be loyal to their group.
4. *Esteem needs* or ego needs are of extreme significance to individuals. These needs may be either internal or self perception or external. The internal includes the desire to be competent in one's job, in family and in social life ; the external includes the desire to appear competent in the eyes of others, to deserve respect, status, records. It is necessary to recognise these needs in the listening audiences and then to strive to direct the presentations to reflect these needs. If done in this fashion one would be disseminating information that is likely to generate the feeling of value, purpose, identity and competence to the listeners which in turn may result in acceptance and internationalisation of the messages.
5. *Self acualisation needs, self–fulfillment or self–realisation needs.* This level of needs does not arise to dominate human behaviour until the four lower level needs previously mentioned have been fulfilled to a reasonably acceptable leave. Self–actualisation needs are the desire of fulflling one's potential and to attain the highest possible level of actualisation. At this level of needs one would have approached the fullest possible level of integration of one's personality. Consequently, an inner urge, to grow and develop one's personality further, without assistance from other people or the world outside, becomes dominant in motivating behaviour.

In taking into consideration the above hierarchy of needs in the planning and management of media programmes it should be understood that the lines between these needs are not clearly defined boundaries and that people do not all reach the same level of maturity and they also do not always relate a stimulus to a need and then follow a prescribed course of action based on a stimulus–response relationship. Moreover, people tend to act on the basis of several needs not just a single one and seldom do they act in identical ways to solve a need in life. It may also be noted that people often substitute secondary goals when direct fulfillment of a need is blocked. Moreover, as people are unable to achieve instant gratification of all their needs, their behaviour becomes a process of reaching short range aims to reach ultimately a long–term objective.

The Media and the Diffusion Process

The diffusion process which leads to a widespread acceptance of innovation has been categorized into five critical states :

Awareness : The individual's first introduction to a new idea or practice.

Interest : The stage at which the individual actively seeks further information and background data.

Evaluation : The stage of assessment on theoretical grounds.

Trial : A limited phase of experiment.

Adoption : Acceptance.

The duration of this process depends upon personality factors which very according to the individual. Thus, there are *innovators or early adopters* who respond more quickly to radical concepts. The *early majority* help legitimise the process. The *late majority* consolidates the process and the *laggards* are the last to accept.

In view of the diffusion process a summarised above the mass media may be best reserved for the following purposes :

Motivation : Programmes designed to arouse interest, stimulate, and generally motivate people towards development and social change programmes.

Evaluation : Programmes designed to provide information for these already interested, who are looking for further material of a descriptive or analytical kind, in order to help them evaluate their own position.

Information : Short messages, intended to provide simple items of information.

Reinforcement : Interest in a subject, or the maintenance of a habit, will die unless reinforced. In development and social change programmes where commitment has to be sustained, regular reinforcement and assurance are required.

Professional : Programmes designed for groups and individuals directly involved in development work : field workers, teachers, extension agents, etc.

Influence : Programmes deliberately aimed at influencing groups, including politicians and planners, and all those in a position to affect policy decisions.

Curriculum : Programmes devised to form part of the curricular work of an educational institution, either as complete items (e.g. in social studies), or as examples to be used in such areas as scientific and mathematical studies.

It has been suggested that mass media are at their best in creating awareness, in providing stimulation and motivation, and in giving ready access to information. They can also be employed to contact field workers, to pass on necessary information, and to keep communication channels open between headquarters' bureaux and extension workers as the development work progresses. But at the specific stages of evaluation, trial and adoption, interpersonal, face–to–face communication counts for much more, and the inability of the mass media to maintain a two–way dialogue with regular feed–back restricts their utility. However, the mass media can give most productive results when they are used in conjunction with an existing, or specially created, network of interpersonal channels ; where their messages are designed to acknowledge, and if possible capitalise upon, an existing social and cultural framework ; and where they are programmed, and their activities coordinated, to achieve a balanced impact.

I. Media Planning and Organisation

In programmes for development and social change there is need for integrated messages. The central administration of all development programmes has to be taken into account. A concerted approach to welfare and development is likely to encourage a greater breadth of vision both in defining the problems and in devising alternative solutions.

It may help to avoid some of the waste inherent in setting up parallel extension networks, and also help maximise expensive resources, including media resources.

For an integrated approach to the use of mass media (both with regard to a multi–media approach and to the integration of development messages) one must purpose a unity of policy, of planning and of production, in a coherent system. The crucial question is therefore : who is responsible for the planning and implementation of media strategies ?

Traditionally, there have been two main approaches : one is to create a special unit to produce media materials, and sometimes to distribute or transmit them as well. The other is to persuade the various existing agencies to handle production, with technical assistance, coordination and advice from a Central Coordinating Committee of media and development programme authorities.

II. Integrated Media Strategy

The media strategy should form the basis of a dialogue between the development agencies and the communication resources as also the individual media producers. A media system cannot be expected to operate unless its articulation is generally understood and agreed. Put simply, the demand is not for individual productions of genius (though these are also welcome), but for items which can be attached, and subordinated if necessary, to the total system.

For the integrated planning of media, a balance of two approaches has to be achieved–the theoretical and the pragmatic. In theory, each medium has characteristic strengths and weaknesses; these can be deployed so that strengths are highlighted and weaknesses diminished. By combining media with media, programmes reinforce each other, in numbers, in depth, in specialism, in technique. By combining mass media with other communication channels, the distributive capacity of the mass organs is exploited, while their insensitivity and inability to maintain a two–way dialogue is reduced.

This theoretical position is naturally modified by real life situations. Any specific multi–media strategy has to taken account of local restrictions, which include the relative state of development of different media, their willingness to co–operate with social programmes, the economics of production across different formats, the availability of trained personnel, the distribution and social composition of the audience. Thus the theoretical model is overlaid by socio–economic conditions, and between the lines of the overlay, a realistic programme can be traced.

Strenghts and Weaknesses of Diverse Media

In formulating an integrated media strategy it is necessary to take into consideration the actual range of the media, their respective strengths and weaknesses. The strenghts and weaknesses of radio, television, film, audio–visual aids, press and print media are summarised below (The considerations underlying the development and utilisation of folk/ traditional media are dealt with separately in Annexure 2) :

Radio

Strengths : has imaginative potential since the listener is required to add his own visual interpretation.

(a) Receivers are relatively cheap and portable.

(b) Relatively inexpensive in production terms.

(c) An entertainment medium phychologically acceptable.

(d) Major news source and widely heard and accepted.

(e) Has massive, immediate distribution.

Weakness : Requires a fully developed radio network.

(a) It is a non–visual medium.

(b) Trained personnel are required.

Television

Strengths : A visual medium which allows for a creative approach.

(a) An entertainment medium, very acceptable psychologically.

(b) A major news source and widely seen and accepted.

(c) Has immediate distribution which can be massive.

Weaknesses : Requires a fully developed TV network and an electrical supply.

(a) Receivers are expensive.

(b) Is expensive, both in production and utilisation unless used extensively.

(c) Requires highly trained production and operational personnel.

Film

Strengths : Is a visual medium which allows for a creative production approach.

(a) Can be tested and modifications made at pre–production stage.

(b) As an entertainment medium acceptable psychologically.

(c) Different language and cultural versions are possible.

Weaknesses : Individual distribution is required, and production and replication are costly.

(a) An electrical supply is required, and fairly sophisticated projection equipment.

(b) Trained production and operational personnel are needed.

(c) Once production is complete changes are expensive to make.

Audio–Visual Media

Strengths : Seen as a group they are flexible and offer a variety of stimuli.

(a) Are cheap and relatively portable.

(b) Language and cultural variants can be easily and cheaply produced.

Weakness : Individual distribution is required thus entailing cost and time consumption.

(a) In some cases an electrical supply is required though batteries can often be used.

(b) In most cases they are aids to assist a tutorial presentation.

(c) Trained production personnel are required.

Press and Print Media

Strengths : Major news source widely distributed and accepted.

(a) Cheap and highly portable.

(b) As an entertainment medium the press is acceptable psychologically.

(c) Print media are quick to produce and to update.

Weaknesses : Require a comprehensive distribution network.

(a) Except for cartoons literacy is fundamental.

(b) Trained production personnel are required.

(c) Costs of production are relatively high for short runs.

Needless to say that in a continuing, protracted communication drive, different selections of media may be used to assist separate phases of the integrated plan.

An expensive medium like the television may be used as an entry point, as a motivational device, but if for cost reasons alone, it cannot be sustained at the same level throughout.

Radio may be less immediately forceful, but can be continued far longer.

Print media offer a means of keeping in regular touch wit literate audiences. Other media, perhaps with little impact in isolation, may nevertheless reach special groups or assist with interpersonal contacts, and so increase the impact of the overall media programme.

III. Strategy Linking Diffusion Process and Programme Formats

Communication strategies in support of programmes for development and social change have to deal, as would be evident from the foregoing expose, with the components of the diffusion process. In addition, the various media, whose strengths and weaknesses have already been described, have to be mobilised for the respective phases of the diffusion process. The media programme formats for the respective elements of the diffusion process could be described as under.

Motivation

Radio : Commercials, Dramas, Serials and soap operas. Musical and song programmes. Personality shows.

Television : Commercials, drama and drama documentaries, serials and soap operas. Song, dance and music programmes. Personality shows.

Film : Commercial films. Features films. Cartoons. Short features. Quickies.

Print : Advertisements. Features.Human interest stories. Cartoons and comics. Leaflets. Gift materials. Display materials. Photographs.

Audio–Visual : Cinema slides.

Evaluation

Radio : Documentaries. Magazine and feature programmes. News and newsreels. Discussion and talks programmes.

Television : Documentaries. Magazine and feature programmes. News and newsreels. Discussion and panel programmes.

Film : Documentaries. Newsreels.

Print : Features. Supplements. Editorials and opinion columns.

Audio–Visual : Library materials and materials for gorup use.

Information

Radio : Announcements and commercials. News and newsreels.

Television : Announcements and commercials. News and newsreels.

Films : Commercial films. Newsreels.

Print : Advertisements and small advertisement. News items. Posters and displays.

Audio Visual : Cinema slides. Displays.

Reinforcement

Radio : Commercials. News and Newsreel. Serials. Discussion and panel programmes. Personality shows.

Television : Commercials. News and newsreels. Serials. Discussion and panel programme. Personality shows.

Film : Documentaries. Newsreels. Short features and quickies. Cartoons.

Print : Features. Supplements. Pamphlets. Readers' letters. Posters and displays. Opinion columns.

Audio–Visual : Displays.

Professional

Radio : Regular magazine –type programmes for specialist groups, including news, reports and discussions.

Television : Magazine–type programmes for specialist groups, including information, reviews and discussion.

Film : Demonstration and instructional films, single and in series.

Print : Pamphlets, reports, books, news–letters, technical features.

Audio-Visual : Series of slides, loops, strips, cassettes, including programmed sequences.

Influence

Radio : Tapes, records, etc. for limited replay at special functions.

Television : Closed-circuit type programmes for limited viewing. Video-cassettes.

Film : Documentary films.

Print : Book, reports and pamphlets.

Audio-Visual : Slides and film-strips series.

Curriculum

Radio : Special programmes (e.g. social studies). Items for other programmes (e.g. maths, science, geography).

Television : Special programmes (e.g. social studies). Items for other programmes (e.g. maths, science, geography).

Film : Documentary films (single and in series).

Print : Teacher's notes. Pupils' pamphlets and workbooks.

Audio–Visual : Slides, Film–strips,loops–either independently or as support materials.

The programme formats elaborated above do not mention about the costs involved nor of a production economics involved. The serial format, for example, is expensive in television, far less so in radio. The cinema film commercial is demanding both of time and of professional skill, the animated cartoon even more so. In the end the simple cinema slide may still be the economic answer. Moreover, there are other artistic forms which may be woven into the general pattern. The use of folkmedia for development and social change communication has been elaborated in Annexure 2. It is a valuable means of approaching a population on familiar, comfortable ground.

IV. Stages of Media Production

Production methods differ from medium to medium, even from one location to the other, but it can still be said that, in general terms, good production, for whatever medium, can be reduced to five main stages :

(a) Specification
(b) Planning
(c) Preparation
(d) Production ; and
(e) Distribution

In the case of television, for example, the stage of *specification* involves the determination of series and individual programme formats; planning involves organising the work of the production into coherent, cost–effective phases (to use of actors's time efficiently, or maximise expensive film and studio resources) ; *preparation* involves rehearsal, the collection of graphic and other forms of illustration, pre–filming and the booking of special speakers ; *production* is the brief period of final activity in the studio ; and *distribution* the actual technical transmission.

Similar processes occur in the press. At the stage of *specification*, the newspaper format is determined, its overall policy and appearance; at the *planning* stage the time of reporters, editors and technicians is efficiently scheduled ; at the *preparation* stage, stories are gathered, compared, re–written, edited or spiked, and plates are set up, prior to a short period of actual *production* and physical *distribution*.

High degree of professionalism is needed in developing communication strategies and in producing programmes. This is specially so since production for social, educational and development purposes cannot be done on the cheap. There are great possibilities for improvisation in materials, in methods, and many ingenious solutions to local difficulties and shortages. But ingenuity, and the ability to improvise, should not be equated with the amateur or the second–rate.

Ingenuity and flexibility are in many ways the hallmarks of the good media producer. There is no set written ordinances confining programme formats to what is already known, or delimiting production techniques to what is already taught. One of the main reasons, in fact, why there is so little experiment in the media is that experiments are very costly to attempt, and a successful, well–tried, albeit tired formula which appears to work will generally be preferred. However, research into utilisation patterns and pre–testing in genuine environments, is so important.

Pre–Testing and Piloting

Simple pre–testing includes the following stages :

(i) Informal discussion of programme ideas and basic outlines by professional production staff (working on background data supplied by specialists).

(ii) Consideration of more finished outlines by specialists and research staff.

(iii) Preparation of draft scripts, for discussion with specialist groups.

(iv) Preparation of prototype materials.

(v) Testing of models in approximate field conditions.

(vi) Revision of models, prior to final production.

Stages (i) and (ii) are part of a continuing dialogue in which professionals from several backgrounds are involved and interact. In stage (iii) scripts are developed by the production agency, but again referred back to the development agency(ies) for checking, particularly on points of factual accuracy. Stages (iv), (v) and (vi), involving the development and testing of prototypes, are primarily a matter for the production agency, but assistance should be taken from the communication experts, both in securing advice on methodology, and in setting up the groups which a re used in piloting.

V. Utilisation, Evaluation and Research

For ensuring the optimum use of mass media and their maximum impact and efficiency, they need to be hardnessed in a way so as to operate predictably within normal social processes.

By *utilisation* is meant the way in which media are treated, reacted to, processed, applied and acted upon by audiences.

Evaluation implies a process of assessment, not in terms of artistic quality, but by the media's effectiveness in meeting stated objectives.

Research involves more detailed investigation, designed to reveal how media operate, how audiences and media interact, and to elicit where possible general methodological principles.

Utilisation : The more specific the objectives of any media presentation, the more articulate must be the machinery which uses, interprets, supports and sustains the messages. This is particularly so since in the context of development and social change, mass media are expected to help secure specific changes in attitude and behaviour.

For such objectives to be met what at least is required is a machinery which gives advance notice of media productions, draws together audiences for viewing and listening, helps interpret messages, supports them and which leads towards concrete action. Also required is a means of feeding back experiences of the media, the audience reactions, to the production machine, to allow for subsequent modifications. And, in addition, a means, if possible, of allowing audiences to participate, not only in the programmes but also in their construction.

The form of organisation which can answer these demands is likely to vary from place to place. It may be created by the government to allow for community involvement in its political and social programmes. It may be an adaptation and extension of a network which supports agricultural and rural development, adult educational programmes, or health and welfare development.

Ideally, it will be an amalgam, drawing them together in a single, co–ordinated network, a sort of a loose federation.

While utilising media in development–centered communication, gorup sessions can be extremely useful. The individual listening or viewing within a group does so in a coherent environment ; if he has questions, he can find immediate answers ; if he has doubts, or reservations, he can argue the through with his companions. Interaction among the group helps smooth the part of trial and adoption.

The character of the group leader is of great importance. He or shy may be field worker, an extension agent, a health worker, a teacher. But the leader has also to be prepared for the special role of media interpreter. This requires a training programme and a regular supply of information and materials. Moreover, the group leader has to be kept continually involved, otherwise his/her own motivation may slacken. The group leader should fee a part of the production chain, and be kept in touch with plans and progress. If the group leader supplies evaluation data, he/she has a right to know what is happening to it and how it contributes to the overall picture. All this is specially true of multi–media and approaches. When the integration of media is closer, explanations and support materials have to be fuller and far more precise ; many systems. Break down because of weaknesses on the part of the utilisers.

It may here be noted that the group is of special value in the last two cases of the diffusion process viz., in curriculum work and with professional audiences. In curriculum work one has a captive audiences. In curriculum work on has a captive audience. As for professionals, the group structure affords an exchange of experience and opinions which may be more valuable even more than the broadcasts themselves.

With general audiences, group listening or viewing may seem to be of less importance. Admittedly, it has several advantages ; if a prime difficulty is to sustain interest, or to ease the passage of information, the existence of the group helps achieve these ends. Members of a group are also likely to be highly motivated, and for this reason group organisation may be critical in a diffusion process.

Thus in devising a strategy of utilisation, close attention has to be paid to the diffusion process. The knowledge thereof affects such questions as : to whom will receivers be given ? To whom will receivers be given ? To whom will support materials be addressed ? This may be a formal leader of the local community ; it may be a leader in a specialist field. Opinion leaders in a community may not be formal leaders ; on the other hand, care has tobe taken not to offend traditional hierarchies. There have been cases of political campaigns which have been lost because political agents failed to acknowledge this fact.

Finally, there is the question of audience participation and involvement. Audiences like both to identify with and participate in programmes, and many devices can be used to encourage involvement. Reader's letters can be read and answered ; a regular spot can be reserved for visits to a local group or community ; places where campaigns are going particularly well can be identified ; the programme can be run in the guise of a "club" with members of the audiences occasionally appearing. However, participation in programme construction is a more difficult matter, but the feedback mechanism can be employed usefully. It is not sufficient simply to change programme styles because of audience that changes have been made at their request.

Evaluation : It is unlikely, in the field of development work, that any very formal evaluation machinery can be devised, on a regular statistical basis. In the school system this is often possible since the audience is captive and teachers are employees. In development work the situation is more fluid. Group leaders may be asked to complete routine questionnaires, the advice of social scientists should be sought but more useful insights for the producer are likely to come form more informal reports and conversations It is therefore essential for the producers of media programmes to visit field audiences themselves for there is no substitute for sharing programmes with the target audiences. Periodically special meetings and seminar can be organised involving the producers and field personnel so that both parties to get to know each other personally.

Research : There is urgent need for well–conducted research. It is to the advantage of all concerned to cooperate with social research agencies willing to undertake such work. A special research area relates to the efficiency of different presentation formats. In addition the nature of the diffusion process in developing countries needs to be investigated.

ANNEXURE 2

ROLE OF FOLK MEDIA IN COMMUNICATION FOR DEVELOPMENT AND SOCIAL CHANGE

In developing countries no communication strategy would be complete unless it included the traditional media, which must rank alongside the more commonly accepted channels of communication Traditional media come from the people and antecede the mass media ; their appeal has historically been both functional and aesthetic. Whether of roughly–hewn folk origins or of classically rigid moulds, they have always served to entertain, educate, to reinforce existing ideas or ideologies or to change existing values and attitudes.

Role in Behavioural Change

Folk media are personal forms of entertainment and communication. This is important because behavioural changes are most easily brought about by personal interaction. These forms of art are a part of the way of life of a community and provide acceptable means of bringing development issues into the community on its own terms. They are capable of reaching intimate social groups, thus, making use of already established communication networks in the audience.

These forms of entertainment evolved as grassroot expressions of the values and life styles of the people, dealing with values as well as information. These features are significant for development planners since, it is rapidly becoming apparent that something more than information is necessary to bring about the behavioural changes involved in the adoption and continuation of practices advocated by development and social change programmes.

Another advantage of the traditional media is that they attract people who might not attend an educational meeting. People who might not attend an educational meeting. With skill, new content might be added to the old forms which are already familiar and dear to the people. Finally, unlike mass media programmes, produced for large and often diverse audiences, the folk forms can use familiar dialects for the most intimate and local communication at the village level.

Folk media have to be seen as part of the social fabric of the community. While they could reinforce relevant social changes that are already occurring (or be used directly to introduce new ideas), folk forms should not be used for propaganda.

To implement a communication strategy in which folk media are involved in an acceptable manner, it is necessary to obtain certain information about the society and the traditional media. Understanding of values, attitudes and customs of the society is crucial, as is knowledge of the role traditional media play in culture.

Being close to people at the local level, these channels are potentially useful in service of social concerns, as determined by local, provincial or national authorities themselves. They are, moreover, abundantly present in areas where mass media technology has not been fully or effectively developed to capture sustained interest at local, provincial or national levels.

Advantages of Folk Media

Folk media offer two distinct advantages : localised and intensive penetration of specific communities over a wide geographic area ; and acceptance by the rural population. Moreover, since they reflect the people's values and culture, folk media carry the stamp of familiarity and legitimacy important to the communication process. The presence of mass media is conducive to the use of the folk media since the former make adaptation of the latter for development communication more feasible. Since the rural people place high value on the folk media their credibility as message channels increases and balances the impersonal character of the mass media.

Pre-requisites for Use

However, there are a couple of imperatives if the folk media have to be effectively utilised :

(a) the need for greater knowledge and understanding of these media, and

(b) the need for training in their use and their integration with the modern media.

The need for a deeper understanding of the folk media cannot be overemphasised, as they embody the value system of the people including their attitudes, beliefs, customs philosophies of life, behaviour patterns, even thought processes. Rightly used, they they represent potent instruments for message absorption, but wrongly employed, they can backfire and set back, perhaps irrevocably, the objectives of the communication effort. Political propaganda indiscreetly woven into solemn activities such as passion plays or religious processions would be in poor taste for instance.

Classification of Traditional Forms

The traditional forms of expression can be classified as performing arts and the include music, song, drama, skits, puppet shows, poetry, speech, sounds, gestures, gossip, jokes, proverbs, painting, certain printed literature, sculpture, handicrafts, costuming, patterning and colouring of materials and use of head–gear. Symbolic meanings may often be an important consideration in use of any one or combination of these forms of expression, and therefore the thought–processes behind selection of forms assumes significance.

In a communication system within a country, the performing arts are likely to have a greater impact upon society than the visual arts. The selection of the appropriate performing art for a given communications programme should be based on an understanding of the aims of the programme load–capacity of the recipient form. These peculiarities of the folk media lend the a robust charm and vitality. The audience is assured of something which is their very own.

Guiding Principles

While the importance of folk media cannot be overemphasised, these should not be misunderstood as the only effective instrument for motivational programmes. As a matter of fact in the overall media strategy, care has to be taken to utilise all the media and place the folk media in the proper perspective.

Initially, informaiton could be handed out through other means of communication including the electronic media. Films, recorded songs, radio programmes, group discussions and lecutres can be utilised for this purpose. In order to make this initial approach more interesting folk media could be utilised for entertainment.

The next step would be inter–personal communications so that the members of the communication team could mix freely with the audience. Probably a series of programmes at short intervals may help in building up a rapport. One great advantage of inter–personal communication should not be lost sight of : The unsophisticated yet wise villagers should be encouraged to adopt social welfare programmes in which the extension workers and village communicators should lend active support. The performers can very well, during their stay in the areas, utilise their time in mixing with the population and introducing adult literacy campaigns, personal hygiene campaigns and such other social work which needs guidance and encouragement.

The following are the guidelines for the development and utilisation of folk media in communication for development and social change and for motivational purpose :

1. The folk media should be an integral part of any motivational programme for rural development. Wherever possible these should be integrated with the mass media ; but, in all cases, integration with the ongoing extension work is vital.
2. The pre–requisites to the use of folk media are : (a) an understanding of the rural audiences and (b) the use of these media to provide the rural people with recereation, to attract their attention, and to ensure sufficient motivation for their participation in development activities.
3. The utilisation of folk media in motivational programmes should be viewed not only from the perspective of socio–economic development but also of cultural development.
4. Folklore reflects the changes that society undergoes ; it should thus retain social authenticity. The folk forms have evolved gradually, and wherever they are flexible they retain their appeal to

the rural people.

5. Not all folk forms can be used for developmental purposes ; thus they should be carefully studied from the points of view of content and characterisation for their possible adaptation in order to carry developmental messages.
6. Folk media productions should be consistent with the needs of the social environment and related to the customs and belief of the local communities.
7. Since folk media have socio–cultural roots, their utilisation should be related to local events, and their function in the local communication strategy for motivation should be properly assigned.
8. Efforts should be made to preerve the originality of each folk form; adaptation need not alter nor destroy the form.
9. For effective community–level communication strategies, an integrated and planned use of both folk and mass media is necessary for achieving optimum impact and for desired feed–back.
10. Collaboration between folk artists and media producers is absolutely essential for the successful integration of folk media and mass media communication strategies for motivation, for development and social change.

Considerations in Selection of Folk Media

The selection of a folk form to communicate change should depend on its ability to convey new values or ideas without negating the traditional values that originally helped give the form longevity and success. Whenever possible, those folk media should be used which directly reinforce basic concepts such as health, wisdom, love and joy. Infusion of developmental thematic elements should remain but a part of the mixture. Moreover, wherever a choice is possible, a folk medium of high social and artistic status should be selected.

A folk performance would have a greater impact in situations where the audience actively participates in it. In rural areas, where folk media are the most effective, the individuals strongly identify themselves with their community. This contributes to the strengthening of the message impact of any performance which is community instigated or sponsored, or in which a large number of respected community members participate. Opportunities for using community–entered folk media should be sought whenever possible.

Some folk media which fit many of the criteria mentioned above are not effective as vehicles of social change because of infrequency of performance. The suspicious nature of a performance may increase its value as a potential method of influencing attitude change, but it is only performed once or twice a year it may be wiser to place efforts on other forms that have a more frequent performance cycle. It is also important to use forms that coincide with established leisure patterns of the intended audience. Some folk forms may be used effectively in urban areas (where particular ethnic groups are located) if they fit, or can be adapted to, the different leisure cycles imposed by urban life.

The two basic considerations in the selection of various folk forms for motivating people for development and social change are :

(a) The prejudices or biases which stand in the way of gaining support for development programmes.

(b) The folk of traditional forms available locally, regionally or nationally.

A judicious selection will have to made, keeping in mind the emotional make–up and the thinking pattern of the target audience since one form may lean heavily on sarcasm, another on humor and yet another still may have deep emotional colour accentuated by music and stylised acting or may have only spectacle or pageantry for its basic charm. Forms with deep emotional colour may not "work" if the audience is educated and takes shelter behind cliches and wishful thinking. Probably, sarcasm, with and humor may prove better instrument for such people. Simple uneducated villagers may respond better to emotional approaches or to spectacle and pageantry. Bringing in forms from other areas cannot and should not be ruled out for they have attraction of newness and may not be entirely unknown.

General Guidelines for Selection

The following general guidelines could serve as an aid in the selection of a particular traditional form or channel :

1. Concern for plasticity of the medium, or capacity of a particular form to be "loaded" wit specific innovative messages. Examination of religious or social functions attributed to the medium should be

made so as not to distort its special role. In some cases, examination may reveal such use to be unacceptable. However, it has been found that many religious themes can be interpreted in modern context, providing impetus for social change.

2. It should be determined whether the medium has an ego or individuality (in which case positive identification of audience with actor can be the agent of change), or whether it is entirely non–individual. It has sometimes been found that certain messages can be best expressed without the personalities of actors in evidence during performance, as in puppet shows, mask presentations and giant figures.
3. It should be noted whether a particular medium, or any aspect of its traditions and features could be used by, or extended to, mass media presentation. If so, is this desirable in relation to both a medium and the message ?
4. Are the required resources, talent, materials, texts, available for extensive utilisation of the medium ?
5. Does the selected medium have entertainment value and/or artistic appeal ?
6. Is it unique enough to prove a valuable communication channel ?
7. Is the form of the proposed medium flexible enough to incorporate a sufficiently broad range of content materials, such a as developmental messages ?
8. Is the medium sufficiently versatile to reach varied audiences ? To properly assess this criterion, the communicators must be in a position to assess the range of traditional media and their suitability for audiences according to local and provincial make–up.
9. Is the selected medium relevant to the intended audience ?

In addition to the above guidelines the following suggestions need to be taken into consideration for mobilising traditional media in the service of development planning :

(a) Proper orientation of folk artists in order that they develop their own understanding of the tasks required of them since they will tend to become change agents in the development process.

(b) Creation of bodies at national and local levels to be responsible for selection of appropriate media and development of methods to utilise them.

(c) Study of the implications of the need for training and research programmes.

In addition to the above, studies need to be developed on the comparative impact of traditional and mass media in an effort to acquire some reliable measurements for future guidance. In addition, a comprehensive inventory of all known traditional media should be developed for reference purposes. Most of the folk media use little or no written text, and though the words and the musical score have been handed down from generation to generation, they have never been rigid.

Thus, a very conscious effort has to be made to modify development–oriented text materials by suitable additions or alterations. As a general note, it is not advisable to effect changes in the preamble of the folk forms since these have grown as a result of the peculiarities of the form itself and the traditions of the region and are at once recognisable by the audiences.

ANNEXURE 3

COMMUNICATORS GUIDE TO RESEARCH AND EVALUATION

Communicators dealing with development and social change programmes have to choose appropriate channels or vehicles for carrying their messages.

These channels are the *mass media, interpersonal media and traditional or folk media*.

The *mass media* multiply a message many time over with words, sound and pictures.

Interpersonal communication refers to face to face communication and includes relatives, neighbours, friends ; development workers, extension or outreach workers and local discussion and decision making groups.

Traditional or folk media are community based and integrated in its belief and value systems. Therefore, they enjoy high credibility.

Given the variety of communication channels development communicators have to make choices for disseminating messages through appropriate channels.

The *decision about the choice has to be taken on the basis of research studies* indicating the media and programme preferences of the target audiences as also their media habits.

Knowledge derived from research studies of listening, viewing, reading and talking habit makes it possible to select those channles which will be most appealing and attract the largest audiences with the least cost and effort.

Media Research

Some of the problems most frequently faced by development communications relate to : selection of media having access to target audiences :

(a) cost of media utilisation,

(b) media suited to specific communication objectives,

(c) media habits and preferences of the target audiences,

(d) level of trust, and belief of the people in particular media, and

(e) characteristics of different media in creating awareness or motivating people or in bringing about change in behaviour.

Some other concerns of communicators relate to organising studies to develop better management of media resources for any communication programme in support of development and consequent social change. In addition, due to limited reach of the media, studies on the methodology and effectiveness of integrated use of media and field work (interpersonal communication, group and community organisation work) can help in better achievement of the programme and communication objectives.

Readership studies help communicators learn about the reading habits of the people, the extent to which the target audiences read and the type of publications preferred by them and the frequency of their reading. Sometimes readership studies are done to find out what types of people have read which item in a publication. This is done to find out readership interest. It also helps in evaluating effects of typographical make–up, display of messages through interview with typical or representative samples of readers.

In connection with readership studies one should determine the *Fog Index*. The higher the index, the more the "fog" there is in written material. The lower the index the less the "fog" and the easier the reading and understanding. To determine the Fog Index of a piece of writing, the following steps are followed :

Step I : Count off 100 words in the written piece. Make a mark at the end of the one–hundredth word. If the material is long, one has to take several samples, say at every tenth page.

Step II : Figure the average length of sentence that ends nearest (either before or after) the 100 word mark. For example, if two sentences make up 104 words, then the average length would be 2 words. If there are ten sentences in 96 words, the average length is 96 divided by 10 or 9.6 words.

Step III : Find the percentage of "hard words". To do this count the number of "hard words" of three syllables or more in the 100 word sample.

Step IV : Use the hundred words sample directly as the percentage figure. First add the number of hard words to the average sentence length. The multiply the sum by 0.4 to arrive at the Fog Index. The factor of 0.4 relates the sum of school grade (e.g. secondary class) level.

In short, divide the number of words by the number of sentences, add the number of hard words and multiply by 0.4 to arrive at the Fog Index. As said earlier the higher the index, the more the "fog". The lower the index the less the "fog" and the easier the reading and understanding.

Graphic research studies include typography, layout and make–up of printed media. By trying out different methods of printed presentation the researcher can find out the more effective way of presentation of a given message. Graphic research has its parallel in radio and television broadcasting where a researcher can find out whether to minutes of time for a message is more effective at the beginning, end or mid point of a programme.

Exhibitions play an important role in disseminating messages. Both fixed and mobile exhibitions can be arranged. This channel needs to be studied by communicators with a view to improving this medium's utilisation. For studying exhibitions, research techniques which can be used are :

(a) observation,

(b) survey–after the exhibition,

(c) before and after survey,

(d) analysis of records and registration,

(e) calculation of cost per visitor or cost per enquiry made by the visitors, and

(f) controlled experiments to measure the effectiveness of alternative exhibit presentations.

Media studies through mail from audience can be taken as a partial measure of assessing the media. Enquiries through mail can be made as a means by which the audience is talking to the communicators. The volume of mail, the nature of reactions and the characteristics of people writing back to media can provide very relevant clues to assess media reach and suitability of the development messages. For this purpose the enquiry producing capability of media could be enhanced. The enquiry analysis can be useful in helping selection of media, measurement of effectiveness, estimation of reach, estimation of efficiency of the outreach workers as communication agents and in illustrating audiences interest and involvement.

Media image studies help ascertain as to how far the use of a particular medium will bring good or bad results in disseminating development messages. The nature of the message and the image of the media should be, as far as possible, supportive to each other. In the case of interpersonal communication, in personal image of the worker becomes very important since he or she imparts an image to the overall development programme and its messages. A worker's image can also be studied in the same way on different important attributes or characteristics as we study the image of different magazines.

Media Distribution Studies help find out whether the medium which has been selected for use will make any difference as compared to a situation where no media are used. In these studies the techniques of comparison are used, e.g. comparative studies termed 'experimental studies'. The procedure to be followed in an researcher does something in one area or in one group of persons and does not do it in another similar area or group. The results are compared to find how the area or the group in which work was done differs from the other gorup in which work was not done or anything new introduced. The group where something is done is called the 'experimental group' and the other gorup is called the 'controlled group'. If the findings in the experimental group are markedly different from those in the controlled group the conclusion is drawn that what was done was responsible for the difference.

The Experimental Method can be used to test the effectiveness of the audio-visual aids also.

A practical way to do so is to consider each aid separately in terms of the objectives for each aid separately in terms of the objectives for each aid. In this case the experimental gorup will receive a specific message with audio-visual aid in question and the control group would be given the message in the normal way by a lecture without use of the aid. The same message or subject matter is imparted to both the groups by the same communicator or outrech workers on the same day in a similar situation and environment except for the use of the audio–visual aid. At the end of the experiment the two gorup are tested orally or in writing about the gain i their understanding of the message. The result is thereafter compared and related to the extent that the objective has been achieved.

Interpersonal Media Research is related to interpersonal media channels which involve person to person message transfer. Interpersonal channels enjoy the benefit of the spot feed–back to the communicator. Because of these two qualities there is special importance of interpersonal media channels for persuasive and motivational communication. Friends, relatives and opinion leaders play a crucial role inn so far as interpersonal channels are concerned. For identifying opinion leaders three different methods are commonly used viz. :

(a) socio-metric,

(b) informants' ratings, and

(c) self–designating techniques.

In the *socio–metric method* members of a community or a gorup are requested to give the names of those community members whom they go to for taking advice and/or for seeking information about any problem situation or any new idea. Those members of the community on whom fall the choices of the largest numbers are identified as opinion leaders who influences the ideas and behaviour of the community members.

Informant's ratings method requires that the researcher or the communicator first lists some judges or informants who are normally supposed to be knowledgeable about the existing influence pattern in a given community. The panel of judges or key informants is requested to name opinion leaders in the community. From the names thus collected, those mentioned most frequently are considered as opinion leaders.

The third is the *self–designation method.* It depends upon how far the community members consider themselves opinion leaders. The method relies upon the self image of the community members. In this method the community members are asked, " Are you a leader ? ... Do you think people come to you for advice and informaiton ?...." The response to these questions identify those who consider themselves opinion leaders.

Audience Research

Different groups of people have different communication needs. Communicators have thus to develop different messages, techniques and strategies for different audiences. It is of crucial importance that the communicator understands the characteristics of the audience. *Audience research* implies undertaking audience survey to collect the basic information about the beliefs, opinions, values, norms, knowledge and behaviour of the people. The information collected pertains to the socio–economic and demographic characteristics as also about the communication pattern and media used by the target audience. The analysis of the information thus collected helps the communicator to plan specific communication activities, develop appropriate messages and take decisions as to the media to be used.

In audience research the *survey technique* is employed. Field survey and audience survey are sunonymous and imply a study carried out in the subject's natural environment using the questionnaire data gathering tool by personal interview or by mail. This technique is also characterised as descriptive sample survey or a correlational study. The technique involves asking a set of questions designed to collect relevant information about the audience. These questions, when answered, provide information necessary for planning and implementing communication activities. Normally a questionnaire contains two types of questions. These are 'open–ended' and 'closed' or 'structured' questions. Whenever the intention is to know the feeling, opinion and information any respondent has regarding a specific point raised in the question, the 'open–ended' question is used. On the other hand when it is desired that the respondent indicate a 'yes' or 'no' response to a question it is known as a 'closed' or structured' question. In collecting the data an interview must enable the researcher–communicator to collect the information as easily and with as little bias as possible. To make this possible the interviewer must establish proper rapport with the respondent. The inverviewer could then record the respondent's reactions and opinions.

For undertaking a survey it is not necessary to collect information from the total population. What is needed is just a sample of the population. To select a sample one could either collect information from any person who is easily available or who meets one accidentally, or one can deliberately handpick the persons because they seem to meet the objectives of the study or better and more effective still use the random or probability sampling method. This method implies that every member of the population has en equal chance of being selected in the sample.

Once the data has been collected it is arranged, added, groped and classified according to each or several of the charateristics or variables to make sense out of the data recorded in individual questionnaires. Tables are prepared to understand the data and problem in detail.

Pretesting of Communication Materials

By pretesting we mean some systematic study to be conducted on audience reaction to messages, campaigns and the type of presentation through a medium before their large scale production and use. *Pretesting is measuring and estimating potential effectiveness, suitability and acceptability of messages and media* before mounting a communication programme on full scale. Pretesting is different from evaluation which meausres the actual and not potential effectiveness of a message. Evaluation is done after full scale production, distribution and utilisation of message/media in the field whereas pretesting precedes all these. Pretesting is thus an immensely important step to reduce chances of communication failures and increase communication successes.

Pre–testing involves a two–step process :

(a) pretesting the message content and

(b) presentation of the message through a medium.

As to the content one can pretes its effectiveness, readability, clarity, of presentation, comprehensibility, acceptability, length, appropriateness of layout, art work, occur, credibility and agreement of the audience with the message. In short, pretesting of the message content deals with the readers' understanding and effectiveness of the message. The presentation aspect deals with type elements, e.g. physical presentation of the message, the size and style of types used, colours, etc.

The steps to be followed in pretesting are :

(a) determination of the objective of the pretest ;

(b) designing alternative versions of the message ;

(c) deciding about the research method for pretesting ;

(d) conducting the pretest ;

(e) analysing and interpreting results ; and

(f) reporting and implementing the results.

As to the *research methods of pretesting* these *are :*

(a) the survey method,

(b) panel method,

(c) experimental method, and

(d) observation method.

The *survey method* involves collection of information through the use of a questionnaire/schedule from a sample of target audience after it has been exposed to the material which is being pretested. The panel method involves the selection of a group or groups of persons to evaluate a certain material and to give judgement thereon. Thus a technical group could give views on technical aspects, a media group could give opinion on the media aspects of the message and yet another group could deliberate and give opinion on the effectiveness of the message.

The experimental method of pretesting involves selection of a group randomly from the target population. The group is then divided into two, one called experimental and the other control group. The experimental group is exposed to the message while the control group is not. The two groups are later compared to ascertain the effect of the message exposure in the experimental group.

The observation method of pretesting involves use of several versions of the message and its presentation. People exposed to these are observed and some also interviewed to give their reactions which are noted and then analysed for making necessary changes.

In order that the communication goals could be achieved all materials and messages developed need to be achieved all materials and messages developed need to be pretested with a small gorup of typical audience. On the basis of the pretest improvements in the materials could be made before wider dissemination if such pretesting reveals deficiencies. Pretesting minimises communication failures and to a great extent eliminates them and provides safeguards against loss of time and resources.

Content Analysis of Messages and Programmes

Content analysis is a research technique for objective, systematic and quantitative description of the manifest content of communication. The content analysis technique can be applied to any message sent through mass media channels. The advantages of content analysis technique are that :

(a) it enables the researcher to observe without being observed.

(b) to know something about the past as revealed by records and documents.

This technique provides for easy replication as the communication messages under study are always available to any researcher. Content analysis can, moreover, act as a support to other more direct research methods. Its descriptive nature easily leads to developing researchable hypotheses for more rigorous testing.

The steps involved in undertaking content analysis are :

(a) formulation of research problems, objectives, hypotheses ;

(b) development of broad categories to classify the communication materials in such a way as to enable the researcher to answer the research problem identified ; and

(c) taking decision on the scope of interest to study and formulate the sampling procedure.

Content analysis is systematic, objective and quantitative in nature.

(a) The advantage of *stating a problem in the form of a hypothesis* is that it clearly guides the researcher to decide what type of data is to be gathered to prove or disprove the hypotheses relationship. Although from the research point of view, stating the problem in the form of a hypothesis is desirable, it need not lead one to conclude that simple statement of a problem leading to descriptiveness exploratory studies is of less use and interest to the researchers. Exploratory studies are of great use in providing valuable insight of the problem and lead to developing a more meaningful hypothesis for further studies.

(b) The *two most frequent categories in content analysis are :*

(i) subject matter category and

(ii) direction category.

The subject matter categories describe or are related content characteristics and the directional categories are based upon differentiating and separately classifying such statements in the content as indicate favourable, unfavourable or neutral attitudes to the content or the programme.

Directional categories are termed as positive–negative, good–bad, friendly–hostile, for–against. The important points to remember in evolving categories are that they should be chosen or oriented :

(i) according to the nature of content so that it can be classified,

(ii) according to the nature of the research question so that category–based classification and description helps further insight into the problem ; and

(iii) keeping in view the variables involved in the hypothesis to be tested.

(c) *Sampling* is one of the most advanced areas in the science of statistics. The most important principle in sampling is the drawing of units or objects, or items, or events or individuals (which ever unit is involved in the study) on a random or chance basis. In other words, the basis of inclusion of units in sample is purely of chance in much the same way as card players distribute cards among themselves after shuffling them well and leaving it solely to chances as to who gets what.

When sampling is done properly, it is possible to describe adequately the total population on the basis of the findings of a limited sample. In other words sampling allows us to make observations or measurements on a limited number (sample) of items, events, objects or individuals so that we can make out impressions about much larger numbers (universe of population from which the sample is taken) in so far as the observation and measurements made in the study are concerned.

Evaluation of Communications Programmes

Evaluation is a process of examining certain events and programmes against previously set up short and long term operational procedures and goals with a view to improving current as well as future communication programmes.

When evaluation is carried out to appraise events and procedures of an ongoing programme it is referred to as *concurrent* or short term or intermediate or monitoring or performance *evaluation.*

On the other hand when it is done after the programme has been completed its planned course for evaluating the impact of total programme it is termed terminal or long terms or *impact evaluation.*

The knowledge gained from either type of evaluation contributes to subsequent better performance and decision making. As such evaluation must be an in built component of any communication programme.

Performance Evaluation concentrates on finding out whether or not the programme has suceeded in establishing itself as planned. It is a device for quality control and helps in redistribution of resources to improve performance quality. It thus focuses more on means, operations and immediate as well as intermediate goals.

Thus, performance evaluation deals with an ongoing programme and its activities. Performance evaluation involves procedures of observation, reporting and case study.

Impact Evaluation is the measurement of the desirable and undesirable consequences of communication programme activities. Impact evaluation is often a terminal, scientific and objective procedure to find out success or failure. Impact evaluation helps in finding out whether the programme has achieved the goals for which it was formulated, whether the programme should be continued in the present form or modified and whether it should be extended to cover larger areas and whether the procedures and practices need improvement.

The research designs which are most often adopted for impact evaluation are :

(i) after–only survey,

(ii) before and after survey study, and

(iii) experimental study design.

(i) *The after–only survey design* is resorted to after the termination of the communication activity under study. It collects information from a representative sample of exposed units or persons. The greatest limitation of this design is a very shaky and unrealistic assumption that the impact or effect found is the result of the communication activity or the programme under evaluation. In this design we have simply no way to find out as to what part of the impact could be credited to communication programme alone.

(ii) *The before–and–after survey design* of impact evaluation calls for making two sample surveys of the same population, one before the start of the programme and the other after its completion. A comparison of the after and before measurements enables us to pinpoint how the programme has been effective in bringing about the desired change. The strong point of this design is that it provides a basis of comparison with the knowledge, attitude and practice status of the group before the start of the programme. Its weakness is in the assumption that any difference is due to the programme. The resulting difference could the combined result of so many things and the comunication activity under evaluation could happen to be only one such factor of change.

(iii) *The experimental study design* can be rated as the best available design for evaluation. This design involves two groups ; one called controlled group and the other experimental. It creates equivalence or similarity between the groups right before the start of the programme. Information is collected through a survey on relevant aspects such as knowledge, attitude and practice about the topic or the message of the comunication activity from both the control and experimental groups before the programme begins. The experimental group alone is then exposed to the communication programme while the control group is not. After the termination of program, again a survey of both the groups is made on relevant aspects which were covered in the first survey. Lastly, the differences in the two surveys for both the groups are worked out. The programme is evaluated as a success if the experimental group improves more than the control group.

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